THE

FARMER'S MAGAZINE:

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(No. XXVII.)

BRANCH I.

ORIGINAL COMMUNICATIONS.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Description of a Reaping Machine, to be wrought by one Horse, invented by Mr Gladstones, Millwright in Castle-Douglas. With a Plate.

SIR,

AGREEABLE to your request, I do myself the pleasure of transmitting a draught and description of the reaping machine, invented by my friend Mr Gladstones, which I trust will, in the mean time, be a creditable article for your work, and ultimately of much advantage to agriculturists. To reap the crop of a large corn farm, since labour became so high priced, proves a burthen of great magnitude; therefore, I am disposed to believe that every scheme, which has for its object a reduction of manual labour, by introducing machinery in its stead, must necessarily be favourably received by cultivators of every description, and particularly by those extensively embarked in rural undertakings. We all know what advantage the thrashing machine has proved to the corn farmer; indeed, without this machine, it is probable the expence of separating corn from the straw would by this time have amounted to nearly the value of one tenth of the crop. Be this as it may, as manufactures have reached their present flourishing state entirely through the aid of machinery, there can be no doubt, but that agriculture may be equally benefited by assistance of the like kind. Those who remember the general opinion when the thrashing machine was first advertised, will not be sceptical concerning the success of a machine for reaping corn; though no doubt the latter, like as happened to the for-

mer, will require many years, and many alterations, before it can be brought to be completely and generally useful.

Without further preamble, I proceed to describe Mr Gladstones's machine, of which a plate is annexed.

A A, are the shafts in which a horse is yoked. B B, are two wheels which support the machine; and, revolving upon the ground when the horse goes forward, give motion to the machine. Upon the axle C of the wheels, the large cog wheel D is fixed, acting in the pinion E; upon the axle of which is fixed the breast-wheel F, and the pulley G. The breast-wheel F, by acting in the pinion R, gives motion to the breast-wheel H. The cutter K is fixed on the lower end of a spindle, coming up through the middle of the iron bar L L L; and upon the top of this spindle the small pinion M is fixed, which acts in the breast-wheel H.

The pulley G, by means of a pitch-chain, sets in motion the small pinion N, which acts in the large gathering wheel O; and on this wheel the large cross arm P P is fixed, to the one end of which the gatherer Q is attached, with another gatherer at the end of it, if found necessary. The gathering wheel O, with its cross arm P P, and gatherer Q, revolves round the cast-iron bar L L L as its centre, or axis.

It is evident, when the machine is drawn forward, the cutting wheel K will be put into a very rapid motion, while the gathering apparatus will go comparatively slow. S S is a circular table of wood, with strong wooden teeth, notched below all around in front of it. The table is fixed upon the cast-iron bar L L L; and as the cutter works immediately below, or rather betwixt the wooden teeth, as may be seen at T, they not only hold the corn from flying the cutter, but prevent it from being hurt or damaged; and the table serves to support the corn when cut till the gatherer comes round.

W is a spindle through the cross arm P; a tail V is fixed to the bottom of it; and the gatherer Q, fixed to the top of this spindle, has liberty to turn backward and forward upon it as a centre. W is a segment of wood, by which the tail and gatherer are supported. This tail keeps the gatherer in its proper position, until it comes round below the large cross beam X. A piece of wood is fixed below this beam, which takes the corn out of the gatherer, and leaves it in small sheaves or handfuls: this it does easily, as the tail of the gatherer being no longer supported by the segment of wood W, the gatherer falls back, and continues in the position as at M, till it comes round to N; when the tail rests on the piece of wood W, and brings the gatherer again into its proper position. The gatherer can be let out and taken

taken in as necessary, by means of the slide groove seen at W. *a a*, Are small circular pieces of wood, coated with something that has a tendency to make iron sharp, by rubbing upon it, but the name thereof I have forgotten. These circular pieces of wood are put into a rapid motion by the rope *b*, over the pulley *c* and *d*. They are so constructed, as to be put in motion and stopped at pleasure, without interrupting the progress of the machine. They also sharp the edge of the cutter. *w*, Is a small handle which turns a screw that sets the pinion E out of the large cog-wheel, and admits the machine to be drawn as easily as a common cart, without putting the machinery in motion. *g g*, Are two handles, by means of which the cutter can be made either to cut low or high, as circumstances may require.

Fig. 1. gives a side view of the machine. Fig. 2. a horizontal view of it. Fig. 3. is a view of the cutting-wheel by itself, with separate cutters or scythes bolted to it, as at *n n n n n*. Fig. 4. is a view of the cast-iron bar L L L: And Fig. 5. is a view of the cutting-wheel. I am well aware of the difficulty which attends a description of this nature, and how imperfectly it may be understood by the great body of those who are interested; but if I have made myself intelligible to mechanics, or such cultivators as are tolerably well acquainted with the first principles of the art, my object will be completely gained.

Suffer me now to add, that several years have elapsed since Mr Gladstones showed me the main parts of the machine which I have attempted to describe; and about two years ago, he made a model thereof, which was mentioned to the Highland Society, by Sir Alexander Gordon Bart. That respectable body at first seemed anxious that Mr Gladstones should construct a complete machine, so as its powers and uses might be sufficiently ascertained; but latterly, for reasons best known to themselves, their support has been withdrawn, and the design likely would have been given up, had not a public-spirited gentleman, Sir Edward Crofton, happened to see the model, and ordered one to be made on his account, which Mr Gladstones is now employed about. I am almost sure you will join me in wishing a successful issue, and that for the best of all reasons, because few inventions can possibly be of greater public utility.

Though you are at full liberty to insert the draught and description of the machine in your Magazine, in case it is thought worthy of that publicity, yet, under different circumstances, I am under the necessity of requesting that it may not be handed about privately, because others might borrow the whole or part of the design; and afterward, like as unluckily occurred in the case of the thrashing machine, claim the merit of the invention.

In the event of your finding or supposing this account not worthy of insertion, it must be returned immediately to Mr Gladstones; but if it is acceptable, a draught and description of a shovelling plough and improved shaker, both invented by that gentleman, will afterwards be sent you. Meantime, with best wishes for success to the good cause, I am yours, &c.

T. H.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Essay on Premiums.

SIR,

THE following thoughts were suggested by a proposal thrown out in a late ingenious publication,* for appropriating annually a large sum out of the national income, to be distributed in premiums for promoting various purposes connected with agriculture. If they appear not altogether unworthy of public attention, your impartiality will not deny them a place in your Magazine.

Premiums should only be given

1*st*, For introducing what is new, or very little known.

2*dly*, For improving what is already introduced and generally received. And,

3*dly*, For removing obstacles, and undertaking operations which could not otherwise be accomplished, except at an expence which they could not repay.

In discussing these particulars, I assume, as undisputed principles;—that the articles, introduced or improven, are not of small, but of very great importance to society;—that, when improvements have been introduced and established, they are to be left to stand or fall on their own bottom;—if useful and profitable, they will be carried on and prosper; if not, they will be neglected, and decline;—and that proprietors and occupiers of land, cannot be expected to engage in expensive undertakings, merely from the patriotic motive of benefiting the community, when they themselves must certainly incur a considerable loss. Should all or any of these principles be controverted, I shall, with your permission, embrace some future opportunity of showing their soundness.

1. In the introduction of what is *new*, much must always depend on local circumstances. The first consideration that strikes us,

* Essays on subjects connected with agriculture, by the celebrated Benjamin Bell, Esq.

as, is, how far the soil and climate is adapted to produce the particular kinds of grain, vegetables, or animals proposed to be introduced. In many instances, this can only be ascertained by actual experiments. But there are many other instances, wherein plain common sense, and a little reflection, may enable us to judge with sufficient certainty. There is surely a fair prospect of raising in one country the productions of other countries nearly of the same temperature. But no individual could reasonably expect that sugar-cane or rice, that the camel or the elephant, could thrive in our cold and variable regions; far less would any public body of men be foolish enough to offer a premium for introducing them. The vine and the olive, the orange and the lemon, growing luxuriantly in climates only a few degrees warmer than our own, afford a presumption that they might here be cultivated to some advantage; and premiums might properly be offered for making the trial, had not the utmost industry of our countrymen, stimulated by the eager hope of gain, repeatedly failed in the attempt. They have succeeded, however, in introducing, from foreign parts, valuable grain, vegetables, fruits, and several excellent breeds of horses, black cattle, and sheep. Some of these, such as wheat, potatoes, and turnips (as far as I can learn), have recommended themselves without the support of premiums. Others, particularly broad clover, and different kinds of animals, I believe, have been assisted, if not by direct premiums, at least by public encouragement, nearly equivalent to them in effect. These facts lead us to conclude, that what are really of public benefit, will find their way into general use, without any aid from premiums; yet premiums, when judiciously bestowed, may be of material service in facilitating and quickening their progress.

These facts, at the same time, suggest another consideration, of which we should never lose sight, in our endeavours to introduce new articles into the department of agriculture. We must take care, that, by the mere force of premiums, they may be in no danger of supplanting or impeding the produce of other articles of known and experienced utility. The staple commodities of Scotland (perhaps of Great Britain), ranked in the different classes to which they respectively belong, according to the value which they bring to the farmer, will be found to stand as follows:—Wheat, oats, barley, peas, beans, rye;—clover, turnips, potatoes;—sheep, cattle, horses, swine. Each of these is cultivated or reared in different districts, according as it is a sure source of gain. No man of sense will substitute, for any one of them, a new article, of whose success he is doubtful, unless secured by a premium of indemnification and profit. Yet many

may be induced, by the magnitude of the reward, to neglect commodities which are in constant request and always sure of a ready market, and to devote a large portion of their fields, their time, and their labour, to the production of other commodities, which may long remain a cumbrous load upon their hands, and by which they would be great losers, did they receive no such compensation. There is reason to apprehend, that this actually has been the case in our own country, with respect to lint; for the culture of which, considerable sums are annually given by the Honourable Board of Trustees. From the large quantity of it annually raised in the counties of Forfar, Fife, Perth, Lanark, &c. I should imagine, that the amount of its produce, and of the premium, yields more profit to the farmers than any other crop they could have had upon the land assigned to that species of crop; while the very small quantity, even in the Lothians, Berwickshire, and this county, leads me to suspect that farmers find other crops more profitable than lint, even when aided by a premium. If, therefore, it be thought a national object to force lint into the agricultural system of these latter counties, to the diminution of the crops presently cultivated there; such an increase of premium must be given as shall make it the interest of farmers to adopt the change. If, on the other hand, it shall rather be thought a national object to favour the growth of other crops, in those counties where the greatest quantity of lint is now raised, premiums should be withdrawn from the latter and transferred to the former. Articles of clothing being at present, in a national view, of inferior importance to articles of food, should only be cultivated where there is a superabundance of land for producing corn, vegetables, and animals for the table; and should be imported where that is not the case. In the ruder age of our fathers, when the inhabitants of this country were comparatively few and idle, it was a wise and patriotic measure to introduce and patronize the culture of lint; as being a necessary and valuable commodity, well suited to the climate and soil, and promising to afford employment to industry, and to become an accession to national wealth. But, in the present advanced state of population and improvement, when there is no want of work, and when such a vast quantity of provisions of every kind is constantly needed; the propriety of continuing such a measure may reasonably be doubted. Lint, after having been for half a century carefully nursed in the fostering lap of premiums, should either have strength to stand upon its own legs, or be suffered to languish and resign its existence as a crop among us. Whatever may be the case in other countries, and whatever might have been the case in our own, yet, at present, in Great Britain, no premium

should

should be held forth for any crops, except such as increase the stock of provisions for man or beast; nor even for such crops, to the superseding or lessening of the cultivation of similar crops already in common use, till their superiority in regard to multiplication and nutriment shall have been perfectly ascertained.

2. The second purpose for which premiums should be offered, is the improvement of articles already introduced and generally received, either by increasing their quantity, or meliorating their quality. Though self-interest be a more powerful incitement than premiums to adopt improvements, by which farmers are enabled to bring more commodities to market, or to sell them at a higher price; yet premiums are by no means without their use. They contribute to direct the attention towards objects of pursuit, which otherwise might escape notice; they rouse a spirit of emulation to excel; and they encourage a perseverance to encounter difficulties, which, without such a spur, might not be surmounted. To the prospect of gain is thus added the desire of preeminence; a motive of no small influence upon ingenuous minds: For, I may venture to affirm, that most of the competitors for the prizes issued by the Highland and other societies, were more keenly agitated, and more highly gratified by the pride of victory, than by the value of the medals or sums of money which they received.

These marks of distinction, however, whether honorary or lucrative, should only be bestowed for improvements of real and general importance; such as, rendering soils more manageable and fertile—raising more abundant or nutritive crops of different grain and vegetables—rearing animals of a larger size, finer shape, and more easily trained to work, or fattened for the shambles—or bringing the manufactures of home materials to a state of greater perfection and stability—or procuring facilities to home trade—or enlarging the range of foreign commerce. Your correspondent A. B. C. * is pleased to ridicule the idea of giving premiums for ploughing-matches in districts already well cultivated, as being an unnecessary inducement to *perseverance* in good tillage, where it is secure of being continued on account of its own superior merit. But he seems to take for granted, that the practice has already attained its utmost perfection; that soils cannot be made more mellow and easily wrought; that ploughs cannot be constructed upon a plan that is lighter and more easily drawn; or that horses cannot be procured more powerful and active. Now, I submit it to him, and to your readers in general, if premiums might not be continued with advantage, even in the best cultivated districts, to

* Vol. VI. p. 178. *et seq.*

ploughmen for performing their task equally well *in the shortest time?* and if new premiums might not be allowed to the farmer whose whole farm was found best cultivated upon least expence of labour? or to him who should till the greatest quantity of land in straight well made furrows of sufficient depth with a *plough drawn by one horse?* I might likewise ask, if the *inventor* of such a *plough*, and the *breeder* of such a *horse* would not be entitled to public encouragement and thanks? Perhaps very few fields, in the richest counties of Scotland, are yet so free from incumbrances as to admit of being ploughed to good purpose by one horse. But who can tell what effect handsome premiums might have (when a sense of honour and the spirit of gambling are made to cooperate with the ordinary sense of interest) in stirring up the emulation of intelligent and enterprizing farmers to cleanse, deepen, and enrich every inch of their arable soil, till it shall resemble a garden? This would not much surpass the wonders that agriculture (through mere regular sense of interest) has already wrought upon many bleak and rugged tracts in our native land, literally turning 'the wilderness into a fruitful field, and causing roses to blossom in the desert.'

Intimately connected with the melioration of soils, is, not merely the increase, but the superior quality of their produce. A fine deep mould, when properly dressed, yields grain that is firm, plump, and weighty, unless the crop shall lodge from extreme luxuriance. Yet much must always depend upon the skill and care of farmers in selecting the most proper seeds from what they raise themselves, or in procuring judicious exchanges of their own with what grows in a different soil and climate. In this selection, besides the intrinsic value of the grain, they must consider its suitableness to their particular situations; and, while paying all due respect to what is fair, sound, and well published, they will naturally prefer what, in cold and exposed districts, will ripen early and give much meal, without being deficient in straw or liable to shake; and what, in rich sheltered fields, will send forth the greatest number of vigorous branches, not apt to be laid down, or easily soaked with rain while in stooks, nor yet requiring a long time to become ready for being stacked with safety. Might it not be advisable to grant premiums for seed of both descriptions; for propagating and improving a species of oats, barley, or other grain best adapted for bleak and high, and another species of the same or other grain best adapted for low and warm parts of the country; the premiums to be adjudged, not upon the seeds being shewn and inspected previous to being sown, but after their merits are fully ascertained by the growth and produce?

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The propriety of offering a premuium for improving the most commodious plough now in use has already been suggested. The offer might be extended to the improvement of other implements of husbandry, the various machinery used in manufactures, all the different articles made of British materials, and every expedient that saves expence, or facilitates labour. Such premiums, however, should be invariably bestowed upon those who *contrive* the useful alterations, not upon those who *execute* them even with the greatest exactness, according to directions or a pattern given, nor yet upon those who *work*, in the most finished manner, with the implements thus altered and improven. On this principle, I cannot perceive the expediency of confining the rewards at ploughing-matches to *ploughmen*, because the sufficiency of the work may depend as much upon the peculiar construction and superior excellence of the plough, which they did not contrive nor make, or upon the strength, activity, and prompt discipline of the horses, whom they may not have bred or trained, as upon their own skill and manual exertion. I would, therefore, restrict such premiums to such ploughmen as have wrought with the same horses at least two if not three years, as it would then be presumable that the horses were trained by themselves, and not put into their hands trained by their predecessors. And similar precautions should be adopted in adjudging premiums for the other improvements mentioned above; that a due share of them may always be received by the real discoverer or contriver, and not the whole drawn by the mere operator, who is indebted in a great measure, if not altogether, to the invention for his proficiency and success.

3. Premiums should be granted for removing obstacles, and undertaking enterprizes too hazardous and expensive to be accomplished by individuals, with a reasonable prospect of an adequate and not remote compensation. In all the instances already illustrated, self-interest has been considered as the chief prompter to useful innovations and improvements, and premiums as lending only a subsidiary and slender aid. In the instance before us the case is nearly reversed. Many works, too onerous for an individual, or even for a flourishing company of individuals, may nevertheless be most beneficial to the community. Such works, therefore, should experience a liberal share of public encouragement. A premium should be allowed, for carrying them on, of sufficient magnitude to defray a considerable part of the necessary outlay, especially where there is no reasonable prospect of a speedy return. Might not several thousand acres, which at present scarcely yield 2s. 6d. each, be planted with different kinds of trees, from which no profit could be derived for at least 40, if not 60 years? But how few proprietors could afford to want the present

present annualrent, small as it is, for so long a period, much less to lay out the unavoidable expence of planting, enclosing, keeping the fences in repair, and training up the young trees? Where the greater part of an estate consists in land of this description, and constitutes the chief income of a proprietor, such an attempt would justly subject him to the charge of egregious folly. Nor would a company of opulent individuals willingly engage in an enterprize, expensive and unproductive to themselves, when the return, however ample, is so extremely distant as to be reaped only by their children's children.

Similar cases might be stated of schemes in manufactures and commerce, as well as in agriculture; some of which have been happily executed through the patronage and generous assistance of the public; while others, from want of that encouragement, still remain unattempted. To such cases, indeed, *premiums* (in the common and strict acceptation of the word) are not properly applicable; for the largest sum held forth under that name, is a pitiful inducement to any man, or set of men, to engage in projects so vast, doubtful, and slow in their accomplishment. I hope I have been understood, all along, to speak of premiums in a more comprehensive sense, as including every species of reward by which human industry is stimulated to exertion, except the necessary and natural fruits of its own labour. The gift of territorial possessions, exemption from heavy duties, monopolies of valuable commodities, and bounties on the exportation of superfluities and the importation of necessaries are, in my sense, *premiums*, and premiums the most alluring and effective. By means of these, the manufactures and trade of Britain, in various articles, have risen to unexampled prosperity, and may now rest securely on their own strength without the continuance of such adventitious props. If there be still any channel untouched, through which either may flow with the same safety and success, to that channel let national premiums be entirely directed. Let new articles of manufacture or commerce be fostered by the genial hand of exemptions, monopolies, and bounties, until they shall attain maturity and vigour; and let not agriculture be excluded from its merited share of public favour. Let premiums on a large scale be freely bestowed upon all substantial improvements in it, which lye beyond the fortune of the proprietor, and which promise to yield only a distant and uncertain return to his laudable and judicious efforts. To improvements of this description all premiums should be confined; and none of them should, on any account, be bestowed on objects whose natural produce is ascertained quickly and sufficiently to repay the trouble and expence.

CULTOR.

Roxburghshire, 31st Dec. 1805.

Note

Note.—The CONDUCTOR, upon the whole, is well satisfied with the moderate and judicious application of premium recommended (in the large acceptation of the word) by *Cultor*; and agrees with him in his general sentiment, that whatever, after being fairly tried through the inducement of premium, cannot stand on its own legs, ought to be allowed to fall.

We do not conceive there is much difference of opinion betwixt this new correspondent, and our former one A B C. Both seem to concur in reprobating premiums, upon mere *perseverance* in what is sufficiently ascertained to be able to reward itself. Both, we conceive, would wish to see improvements encouraged, in regard to all the utensils of husbandry; nor would either encourage a droning perseverance in the old, without attempts at improvement. As to the assignment of reward to the *inventor* of an improved instrument, rather than to the *operator* who makes best work with it at a *ploughing*, or *harrowing*, or *hoeing* match, we do not see how this could well be done: A *patent* (included in *Cultor*'s comprehensive sense of premium) is the proper premium in this instance; this inveigles no one to use it, excepting in so far as it is found really useful. We would rather be inclined to continue the premium to the best *operation*, as this will have a tendency (so far as premium operates) to introduce the *use* of such instruments as are found to execute the work best, the *time*, no doubt, being always also taken into consideration.

In the comprehensive sense in which *Cultor* treats of premium, we are rather surprised that he hath not adverted to those obvious rewards for the encouragement of agricultural excellence, to which our correspondent A B C has alluded, as of much more importance than any other species of premium, viz. the security of reaping the proper fruits of industry and outlay, through the sufficient endurance, and transferable constitution of the lease. To have the Scots law, in regard to these important particulars revised, and to have the powers of proprietors, in these respects, enlarged, would be an object highly worthy of the attention of so respectable a body as the Highland Society. Through the help of our correspondents, we have endeavoured to bring some of these topics under discussion, and shall persevere in our efforts.

In regard to very extensive undertakings, which private stocks would not aim at, without the advantage of monopolies and exclusive privileges, perhaps they had better, in general, be let alone, till stock sufficient of itself to command them, shall have accumulated in the course of more accessible industry. These exclusive privileges may force stock prematurely into less profitable occupation, before the more profitable subjects of industry have been all fully occupied, to the diminution of the increase of national wealth. Their effect too, is to beget *a reliance*, to the diminution of that enterprize and economy in the partnery, which otherwise might have been more successfully employed.

As to measures, which cannot be undertaken by private persons, from the inadequacy, or too great distance of their return, we agree that the public ought to stand forward *in aid*, however, *of those having*

having interest, (like the conducting of the roads at present through the Highlands), rather than *in subjecting itself to the whole burden:* the reason is so obvious as to need no illustration.

We wish our respectable correspondent could suggest some scheme of this kind, in regard to the planting of moor land (which he so properly notices) with trees. We also wish he could suggest a mode of public aid, through which the individual might be assisted; have an interest in the final success, so as to be fit to be entrusted with the intermediate management; and run risk, in case of negligence, from being made to pay for the broken pots.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Experiments on Cheviot Sheep.

SIR,

THE favourable manner in which you received the paper I had the pleasure of addressing to you in May 1803, on the subject of Cheviot Sheep, and your ready compliance, in giving it a place in your instructive Magazine, induces me to hope that you will again indulge me, by laying before the public the result of experiments, made at the instance of the gentlemen of the Cheviot Society, in order to prove the validity of the assertion, that Cheviot sheep would feed at an early age. Many and various are the difficulties, with which the breeders of these sheep have to contend, in their endeavours to improve them, arising, as well from their exposed and barren situation, as from the attention which they must necessarily pay to wool; and but a short time has elapsed, since these improvements have been spiritedly attempted. You, Sir, well know the slow gradation by which improvements in stock are effected; but, should the result of these experiments disappoint the sanguine expectation of some of your correspondents, I must request they will attribute the disappointment to unavoidable circumstances.

In July 1803, a Committee of the Cheviot Society selected a few lambs, from the flocks of their members, for the experiments, some of which were killed in November 1804, averaging from twenty to twenty-one pounds and a half per quarter, with from thirteen to fourteen pounds of tallow each. Three more have been killed since, in July, September, and October last, which averaged from twenty-five pounds and a half, twenty-six, to twenty-eight and a quarter, per quarter; the latter had eighteen pounds of tallow. Having, as I flatter myself, adduced sufficient evidence to prove the position, that Cheviot sheep will feed at an early age, I have only to add a few words to your correspondent

on

'on the Nature and Management of the Short Sheep, with Remarks on the Difference between them and the Cheviot Breed,' inserted in your Magazine of the month of May 1803. I cannot but regret, that domestic, or any other consideration, should intervene to induce him to withhold the experiments he states himself to have made, to ascertain the comparative excellence of the two breeds of sheep, which certainly must be of importance, not only to those immediately interested, but to every well-wisher of his country. It is a point upon which the public have every claim for information; and, indeed, without the knowledge of such particulars, it is not possible to come to any decision whatever on the question. At present, therefore, I can only once more urge my assertion, that repeated experiments have established the superiority of the Cheviot breed over the Forest, and all other kinds, in Highland situations; and am happy to say, that the lapse of two years further experience, has contributed to confirm my opinion, if any doubt could have arisen on the subject. Your correspondent must not, indeed cannot, expect, that the unsupported assertion of any individual, however respectable, should induce the stock-masters to adopt once more the Forest breed, after having found by experience, that their pastures, however high, wet, or stormy, may be stocked with Cheviot sheep, to more advantage than with the Forest, or any other breed whatever; and every one who is acquainted with the valuable qualities of the Cheviot breed, well knows that they are not of an indolent nature, nor apter to shrink from sleety blasts in any season. If your correspondent should, at any future period, explain the process of his management, or detail the experiments he has made, he may be assured that the question will be met in the most liberal manner, and the point discussed with all possible candour, for all I wish is, impartially to serve the cause of truth; and it is my inclination, as much as it is my interest, to cultivate that breed which, after every circumstance is maturely considered, shall be found most beneficial and profitable to the community at large. I remain, Sir, yours, &c.

Woodhall, 2d Dec. 1805. A CHEVIOT BREEDER.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On the Navel ill in Calves.

Barmoor Caſtle, Northumberland, May 26. 1806.

SIR,

IT being my anxious wish that every information, *however trifling*, relative to the diseases in sheep or cattle, should be communicated

municated to the public for further trial and improvement, I cannot find a better mode of accomplishing it than through the medium of your excellent Magazine.

In all breeding counties, they suffer considerable annual loss in their calves, by a disorder here called the *navel ill*, and for which no remedy has yet been found. This disease is an inflammation of the navel string, that takes place between the third and the tenth day. In this part of the country, as soon as the calf takes this disease, they consider it as dead; indeed, so strong is the idea, that butchers and graziers will not purchase them till they are old enough to escape the disorder.

I shall endeavour, as shortly as possible, to explain my mode of treatment in this disorder, by giving you an exact account of my proceeding in a late instance.

Having a favourite calf of mine ill, I was desirous of trying my plan; and in order to be sure I was not mistaken in the disorder, I sent for an eminent man in the neighbourhood, who immediately declared it to be the navel ill, and that the calf could not live much longer.

The calf was then three days old, had left off sucking, breathed with difficulty, had a considerable discharge of saliva from the mouth and nose, and at the time a great inflammation and hardness about the navel.

I gave it one glass of port wine, one table spoonful of powdered bark, and one hundred and fifty drops of laudanum. I then ordered the belly to be well fomented every two hours with a hot infusion of camomile flowers and marshmallows. The next morning I gave it two tea-spoons full of rhubarb in a little milk, continuing the fomentation.

That evening the calf again took to sucking. On the third morning, I observed the difficulty of breathing still continue. I therefore repeated the dose of port wine, laudanum and bark; but as the inflammation of the navel was abated, I discontinued the fomentation. From that time the calf took its full quantity of milk, and is now thriving as well, if not better, than any one I have.

Should the above communication be deemed worthy your notice, I shall feel much honoured by your acceptance of it; and have the pleasure to be, Sir, your obedient humble servant,

FRANK SITWELL.

NOTE.

The CONDUCTOR is highly obliged to Mr Sitwell for the above interesting communication, and trusts that breeders in other districts will derive much benefit therefrom. Were gentlemen of experience and observation generally disposed to favour the public

lic with the result of experiments made by them in the different branches of rural art, it is impossible to calculate the advantages which necessarily would follow. What is *now* called an art, might *then* be gradually improved into a science; the interest of individuals would be promoted and extended; and the good of the community increased in an astonishing degree.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On the Improvement of the Highlands.

SIR,

I AM much gratified by the success which has attended my method, of calling forth into your Magazine essays of such real importance to the possessors of improveable estates, as the two which have obtained my premium. Although, from the small proportion of arable land on my estate, I had no prospect of being extensively benefited by the information I expected to obtain; yet, from the rapid change which has taken place in the sentiments of many proprietors in the north, and the eagerness they have shewn to obtain farmers from the south to cultivate their estates, I considered it my duty, when the thought occurred, to procure for them the opinions of experienced agriculturists on the question proposed. I trust that, since some mischief has already been done by needy adventurers, we will not require to be particularly cautioned against them. I think it not improbable, that the agitation of the question I have introduced into your Magazine, will prevent adventurers from attempting to impose upon us Highland lairds; and, should any such make the attempt, hope they will find us too far north for them. No farmer of character, skill and capital, ought even to look at a farm in the north, unless he be previously assured of liberal encouragement; and no Highland proprietor ought to have any thing to do with a farmer, who cannot produce sufficient proof of his fitness for what he desires to undertake. To one who is willing to bring character, skill and capital to the North, every proprietor ought to grant such just and fair concessions as are mentioned in the two Essays to which the premium was adjudged, and in your remarks; on which I now beg leave to offer a few observations.

I am not singular in expressing astonishment that the necessity of engrossing small farms, as a previous step to the improvement of the Highlands, should for a moment be doubted, or that the system of crofting should be recommended. Except by the Earl of Selkirk, the principle of population does not seem to be well,

well, if at all, understood by any who have written on the subject of Highland emigration. When considered with respect to the present situation of the Highlands, emigration cannot have any permanent effect on their population. It has gone on to a great extent for many years; and I believe I can venture to assert, that no evil has been seen or felt to arise from it. The cry against it has been raised, not because it has produced any bad consequences, but because some would-be popular speculators chuse to attempt to frighten us by an evil which their second sight may see approaching, but for which they cannot find a name; but when puzzled, they always appeal to the feelings of mankind, and not to their reason. These speculators, too, appear, or pretend, to have an affectionate regard for the people in the Highlands, but never take any trouble to inquire into the merits of the objects on whom they seem so ready to bestow their affections. Although I have no intention to enter at present into a discussion of this extensive subject, I cannot help observing that some very important distinctions have been overlooked in the consideration of Highland emigration. A superfluity of population, and too great a population, are very different things. In the one case, employment, and in the other food, cannot be found in sufficient quantity. One of these only, the first, ought to be applied in the case of the Highlands. But these two cases have been jumbled together; and, of course, the ideas of many persons who have taken up the subject, have been somewhat confused. Considering the engrossing of farms confessedly as a cause of emigration, and a cause of depopulation, in the case of the Highlands, has likewise tended to prevent the cobwebs being cleared from before those who have two pairs of eyes. My own sentiments on the subject in general may be very shortly summed up. In whatever situation employment can be found for the superfluity of people, let them, if they show the smallest degree of inclination to be industrious, by all means be retained. If skill, industry and capital, can be found in the Highlands, (these being absolutely necessary for improvement), no consideration can induce us to part with them. If we cannot find them at home, it is our duty to the public, our children and ourselves, to seek for them where they can be found, and to give people, who at present baffle every attempt to render them industrious, an opportunity to follow their own inclinations, by giving them sufficient warning of their removal. On the western coast it may be highly proper (and I am decidedly of opinion that it is so) to divide the detached arable ground into small lots or crofts, in order to encourage the people to apply themselves to fishing. But in any other case, devoting extensive arable districts (which ought to be prepared for yielding subsist-

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ence to an industrious population, which I yet hope to see numerous) to furnish a scanty subsistence to the occupiers, is bad policy indeed, and a very mistaken method of rendering people happy or contented. The crofting system would ultimately put a stop to improvement of every kind. A man without industry and skill, cannot better his condition in almost any situation, far less on a small croft, which holds out no inducement for increasing skill, and no temptation for industry. A crofter must remain always *in statu quo*, and be a useless member of society; or, what is the plain English of the schemes of the speculators already mentioned, he must be condemned to beget and rear children, to be sold to recruiting officers. Without pretending to have the advantage of the second sight, it may be plainly perceived, that we are desired to keep our people for no other purpose, than to be subjected to the privation of them whenever recruits are wanted. What shall we do for soldiers and sailors, if the Highland lairds are allowed to turn away their tenants? is always the burden of the song. Gracious heaven! are we to be compelled to rear human beings for sale, as we do cattle and sheep? Are we alone, of all the proprietors of land in the kingdom, to be prevented from acting according to our judgment, and from turning our estates to the best account; and forced to make them nests of misery? I hope not. I trust we shall be able, ere many years elapse, to exhibit in the Highlands, a population more numerous even than the present, and industrious beyond all comparison. Of that population, too, the native inhabitants will not constitute the smallest part. At present, we have many more people than we can find employment for; and until our soil is brought into a proper state of cultivation, and we can amass some capital, and remove some obstacles to improvement which I shall presently mention, we cannot have a population at all desirable. I have gone much further into the subject of emigration than I intended; but hope you will excuse me. I will say no more of it at present; but beg leave to recommend to every one who has speculated, or who wishes to speculate on the subject, to get by heart, what are of as much use to them as the grammar and spelling book of their mother tongue, Smith's Wealth of Nations, and Malthus on Population.

With respect to the length of lease to be given to an improving tenant, I hope no one who has it in his power to settle such a tenant, will ever think of cramping him by a short one. But there is an obstacle to Highland improvement, which has been little taken notice of, although perhaps it is the greatest of all

others, because it prevents too many proprietors from granting leases of sufficient length. I allude to entails. The proprietors of entailed estates are in some degree relieved by the act of Parliament in their favour; but by no means to such an extent as to admit of proper encouragement being given to skilful farmers. I have great hopes that the present active President of the Board of Agriculture will turn his attention to this subject, and that he will induce the Legislature to lighten the fetters of entails. For my own part, I am sufficiently loaded with them, and long to be free; and I know many others, both in the Highlands and Lowlands, equally anxious to be relieved from this species of slavery. We have no objections that our estates should descend to our eldest sons:—if they do not deserve them, it will be our own fault; but we think it hard that we should be prevented from making our estates yield easily what may set our younger sons into the world with some prospect of success, and what may afford a decent marriage portion to our daughters. It would be a wise act of the Legislature to prohibit entails from being made in future, as well as to set estates already entailed perfectly free from every restriction, except the order of succession, and one against loading them with debt beyond a certain extent.

Nothing can be more evident than the impropriety of restricting a tenant, who understands his business, in the management of a farm. The variety of soils in many farms, prevents any possibility of going over them with a regular rotation; because some fields may not be fit to carry a crop which may succeed very well in others adjoining. To insist on a farmer sowing where he cannot reap, is rather absurd.

The question, whether the landlord or tenant should erect buildings, and make the necessary enclosures, may, I think, be brought to a very short issue. It never can be supposed that a tenant is to be at the expence of building and enclosing a property not his own, without remuneration. The question simply is, who is to be burdened by the first outlay? In general, proprietors allow a deduction of rent according to what is done during a given time. Sometimes the tenant is paid at the end of his lease. In either case, the capital of the tenant is diverted from its proper channel; and the improvement of the soil, which is the interest of both parties, but chiefly of the landlord, is retarded. This retardation, I would think, will nearly balance any trifling saving to the proprietor from having the money destined to pay for buildings and enclosures somewhat longer in his hands. The laying out the money, in the first instance, will afford him the pleasure of seeing his land more quickly improved, and, in fact,

fact, deprives him of nothing. Besides, it cannot be doubted, that a farmer will give a much higher rent for an enclosed farm, than for one which is open; and thus very fair interest may be expected for the money expended. No farmer will hesitate in choosing, whether to pay the expence of building and enclosing, or the legal interest of the money laid out on these by the landlord. He will at once consent to pay the interest, because he will have it in his power to devote his capital entirely to the soil. On the whole, then, it appears to be the interest of the proprietor to lodge the farmer and his stock comfortably, and to put it in his power to direct his capital to its proper object. I take it for granted, that the tenant is to be bound to keep his premises in proper repair, and to insure them against fire; and that every expence necessary for improving the soil is to be borne by him.

With respect to subsetting, I see no harm that can arise from it, when limited to the subsetting of the whole farm to the person, of whose fitness the landlord must be satisfied. But I am decidedly hostile to the portioning out a farm to a number of subtenants, and to permitting more than one subset during the lease. I am so convinced that the authors of the two essays considered subsetting in this limited sense, that I will not enter further into the subject. With respect to any stipulation for a compensation to a tenant at the end of his lease, for improvements which he could not be paid for during the currency of it, I have some doubts of its fairness. The caprice of a tenant may direct him, with a prospect of future compensation, to erect more expensive buildings than what are necessary, and in greater number; and to carry on his plans in a style by far too extravagant. It would not be an easy matter, at the conclusion of a lease, to determine whether any additional buildings which have been erected, are necessary. They may not be wanted by the incoming tenant, and, in that case, are useless to the proprietor. But on this subject I have not as yet made up my mind.

I am firmly convinced, that a restriction in the nomination of a successor to a lease may be useful in some cases; but that in nine out of ten it will do mischief.

I now come, Sir, to your remarks, for which I give you my best thanks. I am very glad that you have explained my object in bringing this discussion into your Magazine. For, although hostile to any restrictions on the free-will of the people in the Highlands to choose whether they will seek employment at home or abroad, yet I neither desire to encourage them to leave their native country, nor others to endeavour to supplant them; and trust that this declaration is not inconsistent with what is said respecting emigration in this letter. Your description

tion of the present state of such parts of the Highlands as are in possession of the natives, is perfectly just. I am glad, however, to inform you, that, since you visited this part of the country, the obstacles to improvement which you enumerate have been greatly lessened or removed. With respect to education, I am happy to have it in my power to say, that it can now be obtained in almost every district, at a very cheap rate. In the parish schools, we have very good teachers. At Inverness and Fortrose, there are academies, and a third is about to be established at Tain. We are paying some attention to the means of education more than usual; and I hope that its benefits will, ere long, be widely extended among the poor.

I am very glad to find that you recommend pasturage as the chief object of a northern farmer. Corn is undoubtedly too eagerly cultivated on the land, and consequently the cultivators may suffer. I should rejoice to see our efforts confined almost entirely to live stock, as being more agreeable to our variable climate than corn, of which we need not cultivate more than what will supply us. Should a greater quantity of corn be hereafter required, when industry and population increase, the soil will be more fit to bear it, after an interval of moderate cropping.

I remain, Sir, your most obedient and obliged servant,

Cowl, 21*st May* 1806. G. S. MACKENZIE.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On Wheel Carriages.

SIR,

IT is hardly conceivable what progress towards perfection has been made in this country, within these few years, in the construction of roads and wheel carriages. Who could have conceived it possible, fifty years ago, that a coach would regularly travel betwixt London and Edinburgh, near four hundred miles, in less than three days? Or that one horse with a cart would commonly draw (as is, to my knowledge, the case with the coal-carts in the vicinity of Glasgow) twenty-eight or thirty hundred weight? It is indeed said, that, sometimes, for a short way, and on a good road, a horse draws even to the extent of four tons: but this I have not seen.

However, it may appear as wonderful to many of your readers, to be told that, on an iron road to Ashby canal, Derbyshire, a horse, of the value of 20*l.* only, on a declivity of $\frac{1}{16}$ths of an inch to a yard, drew twenty-one carriages, loaden with coals and timber,

timber, amounting in whole to the weight of thirty-five tons. And he drew up the same acclivity five tons with ease. At the same place, another horse drew thirty tons of coals, in presence of the Earl of Moira. *Agr. Trans. vol. II.*

Yet the improvements that have been hitherto made on roads, and on carriages, it is more than probable, are but little in comparison of what they are susceptible.

But what led me into the present speculation, was the reading of an ingenious paper, by Alexander Cumming, Esq. in the second volume of the Communications to the Board of Agriculture, to which I beg leave to call the attention of your readers, and more particularly your correspondents.

Mr Cumming shows, in a plainer manner than I had before seen demonstrated, that the conical or tapering rims of wheels of carriages, now universally used, are not only much more destructive to roads than broad cylindrical rims, but that they also have a strong bias to deviate from the straight direction. Of course, a much greater exertion is necessary to draw forward the conical than the cylindrical roller; and therefore the latter shape is universally adopted in garden rollers. And if carriages, like garden rollers, were drawn by men, the increased exertion required by the conical rim, even on the best and smoothest roads, would soon engage their attention, and would procure to the cylindrical carriage wheel, that preference which is justly bestowed on the cylindrical garden roller. Nor does any advantage that the conical wheel may have in the act of turning, seem to be an important objection to the more essential superiority of the cylindrical.

Also, Mr Cumming is of opinion, that low, light wheels, and long and straight axles, should be preferred to all others; for the reasons that he gives at great length. He thinks that the centre of gravity of the load being kept low, diminishes the agitation, renders the draught lighter, and the carriage more secure against overturning.

Any suggestions that may be useful in tending to lessen the draught of horses, or, what amounts to the same thing, to permit their drawing a larger burden with more ease, to diminish the waste of roads by carriages, or to render carriages less apt to be overturned, may be considered as of the highest importance to the agricultural part of the community.

A. S.

FOR THE FARMER'S MAGAZINE.

Observations on Manures, and a Cheap and Easy way of increasing the Quantity of them.

In the following observations upon manures, I mean to confine myself to such as are derived from vegetable and animal substances, and mixtures of these with such earths as will at once increase the bulk of the heap, help to divide and mix them more intimately together, and in some degree correct the texture of the soil to which they are to be applied. The procuring and preparing dung, though a matter of the greatest importance to farmers, and the want of it often lamented, is yet very generally neglected among them. I will, however, venture to assure them, that whoever will bestow a reasonable degree of pains and attention to it, will make much more than, without experience, he could form any notion of. Vegetable and animal matter must be prepared by a certain degree of putrefaction, and no more, in order to be applied to land in the most beneficial state as manure. In order to proceed upon principles in this necessary business, a man should endeavour to get at least a general knowledge of the composition of the air of the atmosphere, and of water, as well as of the constituent elements of vegetable and animal bodies. I shall therefore endeavour to give a short detail of these, in as few words, and as little technical as possible.

To begin with air; which, for ages, was considered as a simple element, but is now found, by modern discoveries, to be a compound of two substances; one whereof, named *azot*, makes 73 hundredth parts of the whole mass; and the other, named *oxygen*, makes 27 such parts. They have got these names from their most eminent qualities; thus, the azot or azotic part, is so called, because animals, obliged to breathe it, are instantly deprived of life, and the flame of a candle immersed in it, is immediately extinguished. The word azot or azotic, is derived from the Greek, and signifies lifeless, or destructive of life: it was formerly called phlogisticated, or mephitic air. In like manner oxygen, being now discovered to be the acidifying principle, has its name from a word in the same language, signifying that property: this part of the air is remarkably salubrious to breathe in, hence it was called vital air; a taper burns in it with dazzling splendour, hence it was called empyreal air, and dephlogisticated air. Besides these proper constituent parts, the atmosphere necessarily receives every thing which exhales from the earth, and from animal and vegetable substances, in the form of vapour or gas;

gas; but such appear to be very soon decomposed, so as not to be discovered in air by any mean hitherto invented: It contains, also, a considerable quantity of *water*, held in solution, or combined with air; and a large proportion of *carbonic acid gas*, or fixed air, universally diffused through it, and not separable from it by any known process, although its presence is made manifest by its effect in rusting or oxydating iron and other metals, and by application of some chemical tests. *

Water also, instead of a simple element, according to ancient opinion, is found by modern chemists to be a compound body, formed of 85 parts of *oxygen* (already described), mixed and deflagrated with 15 parts of *hydrogen gas*. The name of this substance is likewise Greek, and signifies, literally, the engenderer of water: it is said to be one thirteenth part of the weight of an equal bulk of common air. † Under certain circumstances, getting into contact with oxygen, it takes fire, and even explodes with violence; and, hence, it is frequently called inflammable air. To breathe it, is instantly fatal.

I shall now proceed to consider the constituent parts of vegetables and animals. And, first, of vegetables:—Their real elements are, *oxygen*, *hydrogen*, *carbon*, and a very minute portion of the *primary earths*. The two first have been already described; the third is carbon or coal: but we are not, by the familiar idea annexed to the word coal, to imagine it is a gross body; on the contrary, it is the pure elementary matter, which gives combustibility to the whitest paper, as well as the blackest coal; and constitutes an essential part of the purest spirits, as well as of the grossest oil and tallow. Besides these, azot and phosphorus enter into the composition of some particular plants: their quantity, however, is very small, and they may be considered rather as anomalies than as essential to vegetables in general. ‡

Animals, being immediately or mediately fed and nourished by vegetables, consist of nearly the same elements; only, containing a much larger proportion of *hydrogen* and *azot*, with some proportion of *phosphorus*, and *sulphur*, and *lime*, which last forms the basis of the bones. Their gaseous origin will appear evident, in the account to be given of their spontaneous decomposition and dissolution, after taking a little further notice of the component parts of vegetables.

The two first elements of vegetables, oxygen and hydrogen, are entirely gases, and are never visible or tangible to our senses,

* Thomson's Chemistry, from p. 271 to 286, Vol. III.
† Ker's Lavoisier, p. 142.
‡ Ker's Lavoisier, p. 178 & 182.

but in combinations with other substances. Water, their compound, constitutes the greatest part of the bulk of plants, and is, of consequence, volatile. The third, carbon, (which is, next to water, the most abundant ingredient in their composition *, and as essentially necessary to their growth), is of a very fixed nature; so that it is the last thing carried off by the fire, in reducing wood or other vegetable matter to ashes, as appears by the blackness, of which it is not easy to deprive ashes entirely, even in a strong fire, and which cannot at all be effected in close vessels by any heat. It is the colouring matter of charcoal, and of the putrid remains of vegetables and animals. In combination with hydrogen, and a small portion of some peculiar acid, carbon forms the different oils and fats. These facts have all been confirmed by the most decisive and convincing experiments; and we shall see that they account, in a very satisfactory manner, for the spontaneous dissolution, which falls next to be considered. When vegetables are spread thin on the ground, they dry and wither, and, in time, moulder away, by a slow dissolution, without any sensible heat; they are all dispersed in the air, leaving nothing but a little black earth. When the decomposition is effected in a more rapid manner, by an open fire, the same effect is produced; that is, they are all sublimed into air, leaving nothing but a small portion of earth, which, in this case, is white, (if the fire has been strong enough to carry off the carbon), together with a little potass. When put together in a heap not dried enough, heat is evolved, and accumulated about the centre: the superincumbent mass not allowing it to fly off as it is formed, it rises to such a height that the hydrogen is forced out into contact with the oxygen of the air, and immediately takes fire, and reduces the whole to ashes. This happens sometimes to hay stacks.

It has already been said, that animal substances consist of much the same ingredients as vegetables; only with a much larger proportion of hydrogen and azot. This last principle is very favourable to putrefaction; and hence it is, that those substances go through their spontaneous dissolution much more rapidly than vegetables, when by themselves. When flesh and other soft parts of animals (even cut into small bits, and spread thin in the open air) are left to themselves, in a few days, more or less according to the heat of the weather, they begin to emit a fetid, disagreeable pungent smell, which, gradually increasing, will smart the eyes like smelling salts; which in fact it is, as the hydrogen and azot combining, fly off in the form of volatile alkali. This evaporation of disagreeable odour (rendered still more offensive, by part of

* Kirwan on Manures, p. 38. & 34. & 40.

of the hydrogen dissolving, and carrying off along with it the sulphur and phosphorus) goes on, till the whole, but the bones, is dispersed in the air, leaving nothing but a little black earth, mostly composed of carbon and lime. This process is not observed to be attended with any heat beyond that of the atmosphere; but, in vegetables, (in few of which azot forms a constituent part) a high degree of heat arises, as has been already mentioned; therefore, it is probable the abundance of azot in animals makes this difference.

In all these decompositions, nothing is annihilated; nor has any thing happened but a mere change of form. In this view, the atmosphere appears an immense ocean of organizeable matter, supplying materials for new productions, and collecting the scattered elements of the old: so that what is abstracted in the one case, is constantly balanced by what it receives in the other; and the sources of reproduction remain inexhaustible. But, with what powers the Almighty Creator has endowed organized bodies to attract and assimilate to themselves those aerial particles, and thereby to grow up, from the most minute germs, to those great and beautiful forms we every where see in the organized world, we are entirely unacquainted.

It has already been observed, that, next to water, carbon is the most abundant ingredient in the constitution of plants; and we may add, that it is, probably, the cement of their solid parts: as we see charcoal (which retains some degree of the hardness, and the entire form of wood) when perfectly freed from its carbon, by fire, falls into shapeless ashes. All fertile soils contain it; and no soil, however well composed in other respects, will produce ripe grain, without it. These are facts ascertained by the most decisive experiments; and, from them it follows, that it is a most important ingredient in the food of plants, and is perhaps (excepting water) the only one in the power of art to supply. But, in order to be so, it is necessary that it be in such a state of combination as to be soluble in water. Art has, as yet, discovered no means to bring it to that state, but the putrefaction of vegetable and animal substances; it is of consequence, therefore, to consider the means of promoting that process. Moisture, air, and heat, are essential instruments; but too much of either retards or prevents it altogether; to quicken it, a putrid ferment is necessary, as yeast is in brewing.

The most common materials submitted to this process for agricultural purposes, consists of the straw of preceding crops, used as fodder and litter for domestic animals, and their dung and urine. Nothing can be better adapted than this mixture. The straw would rot with difficulty, and imperfectly, but for the dung, which

which not only brings an accession of the richest materials, but, having had the putrefactive process considerably advanced in the course of digestion, and abounding in azot, acts as a ferment on the mass, to which an industrious farmer ought to add all the refuse vegetable and animal stuff he can collect; in short, whatever is capable of rotting is fit for his purpose. The situation of the middenstead is also of some consequence. It ought to be quite flat, not hollow in the middle; otherwise the dung, which lies in that part, may be drenched, but will not rot; it ought to have air, but not to be exposed to strong blasts, lest it be too much dried. The midden ought to be built of a regular form, and the surface kept smooth, to prevent partial drying, by spreading the heaps as they come from the wheelbarrows. It may be about four feet high; as, if much more, the weight will exclude the air from below, and prevent its rotting. The whole ought to be kept moist, but not wet; if that precaution is neglected, the heat is apt to rise so high, in some parts, as to firefang it; in which state a white mould grows on it; it contracts a mouldy, earthy smell, feels light and dry, and is probably of little value. These circumstances being duly attended to, the putrefaction will go on prosperously; the mass turns first brown, and gradually darker, and at last black, when fully putrefied; after which, it loses its virtue daily, and, at last becomes useless. Here it may be proper to mention, that a question has arisen among farmers, *whether it is moſt beneficial to apply dung fully putrefied to the land, or freſh?* This point appears to me completely decided by the experiment of Mr Hassenfratz. He manured equal pieces of the same land, with putrid dung to the one, and fresh to the other; the result was, that with putrid dung produced a much better crop the first year; but the second year, that with the fresh was best, and the same the third; after which they appeared equally exhausted. Hence it would be adviseable, in making up the midden of the season, to make it in leets or allotments, and to finish one before beginning another; by which means, a person has it in his power to use the more or less rotted, according to what he has in view.

There can be no doubt, that dung makes the best of all manures, and for all sorts of land. But few arable farms can make enough of it to enable the occupier to manure the extent of land he would wish; recourse, therefore, has been had to composts of various kinds.

The best compost appears to be that which Lord Meadowbank lately communicated to the public, composed of peat-earth and dung in layers. The peat-earth abounds in carbon, (whence its familiar use as fuel), which may be loosened and rendered solu-

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ble in water by the putrid ferment induced by the dung; but even this, in many situations, is not to be had.

There is, luckily, however, an animal substance, very generally neglected, though generally obtainable in considerable quantity, which I would very earnestly recommend to the attention of my brother farmers; that is, urine. In all farms, where any number of cattle are kept, and the fodder of course consumed at home, and the horses fed on cut clover in summer, and, above all, where turnip feeding is practised in winter, the quantity that may be collected is prodigious. Cattle on turnips are computed to eat, each, half of their flesh weight of them, per day. Suppose that half to be 15 stone Amsterdam; then, of 15 stone of turnips, at least, one half must be voided as urine; 7½ stone of urine will be fully 15 English gallons, daily, for each beast. From this rough sketch, some notion may be formed of the great quantity which may be collected by attention with a proper apparatus. This substance, besides the carbon and saline matter common to other animal fluid, contains a particular compound salt, to which urine owes the peculiar smell that distinguishes it from all other bodies: it is computed to contain more azot than any other animal substance. From those considerations, it is evident, it must be a valuable addition to composts. Instead of attempting general directions for collecting and applying it, it will be easier for me, and perhaps more satisfactory to the reader, to give an account of the method I have used; that those, who know no better, and are inclined, may follow it; and those, who do, may improve upon it. After long regreting the waste, and even nuisance occasioned by the urine flowing out of the cowhouses and stable-doors, I determined, a few years ago, to try to collect it in sufficient quantity for use. Luckily my cattle-houses were all in a row, forming the side of a square; the end house of the row was a small division of 8 feet by 15, used as a boiling-house for horse meat. In this house, I dug a hole for a cistern, 8 feet by 6½, and about 6 deep. The soil being an open gravel, I laid the bottom of it with tough clay, and upon that laid large flags from a slate quarry: having thus laid the bottom, the sides were built up with mason work. We then proceeded to make a conduit, the whole length within the houses, by the side wall next the doors; in its course, it had to pass through the foundations of four partition walls. When it was finished, it had that declivity through the whole length, as would allow the liquor to pass freely to the cistern. It was found, that some parts of it must be covered, on account of the stance of cattle over it, and other circumstances; in such parts, the bottom was laid with flags, and a small conduit about 6 inches square built and covered with

with mason work. In such parts where that was not necessary, it was causewayed and left open; and where it passed from the open to the covered parts, a small iron grate was fixed, to prevent dung or other matter getting in and obstructing the pipe; in such of the houses as would not admit of an open drain, a communication was made with the pipe by means of a hole through the cover, which was also defended by an iron grate. The next operation was to cover the cistern, which was done with large freestone flags, in the middlemost of which a strong iron ring was fixed, by which it could be lifted when necessary to clean out the cistern. The flag nearest the corner by the door, has a hole made through it, to admit a pump; the spout of which is just on a level with the lintel of the door. As it is my practice to make up the composts in or near the field to which they are to be applied, I mounted two wine pipes on two low wheeled carts I happened to have; the casks have each, in the one end, a brass cock of an inch bore, and their bungs are enlarged to holes of about 3 inches square, to admit the end of a large wooden funnel, on one side of which is a notch to receive the ends of two boards nailed together at right angles, which, hung by a string to the spout of the pump, conveys the liquor into the funnel and cask; by this means, it can be easily carried to where it is wanted. The cistern contains above 500 English gallons; and the whole expence did not amount to five pounds, exclusive of the labour of my ordinary servants. Having neglected to put a layer of clay betwixt the side wall and the gravel, the cistern did not hold in at first; which was remedied, by coating over the inside with plaster, and coal tar and pitch. I formed my cistern all within the house, because I found it could be done without any loss of room; for even the little boiling-house is turned into a convenient place for feeding two cattle on turnips, whose urine goes directly into the cistern. But, in whatever way it is contrived, care should be taken, that no rain water have access to it; otherwise, the liquor will be so weakened, as to be of little comparative value. Having little peat earth, what I commonly use in composts, is dug from soft spongy wet pieces of ground, (in a regular form, that they may be ultimately made into ponds), and carted to the fields where it is to be used, and laid in a convenient way to be mixed with the dung when brought to the place. I have also used old-fashioned high gathered ridges, cloven down with the plough, and the mould laid aside ready for mixing; in short, any good earth answers very well. There is nothing particular in the manner of mixing it; only, that one or both the casks of urine are always at hand, with a common watering pot with wide holes in its nozle, with which every layer of earth gets

a good soaking; and after the middens are made up, they get occasionally a wetting of the same kind all over the surface. About a month before they are laid on the land, we commonly turn them, and give them a watering in the same manner. They are generally attended with a gentle heat all along. I have practised this method for several years, and never have reason to complain of want of dung, or of my crops, unless there is something very unfavourable in the season. But this is not the only use to which this liquid manure may be applied. I have a trough with a tin plate bottom, with many holes that allow peas to pass, which is occasionally fixed to the end of the low cart, so as to receive the cock of the cask, with which I sometimes water a piece of pasture grass, in the winter, by making the horse travel forward and back upon it, which produces a very striking effect visible the whole summer after. I have tried this on growing oats, with a similar effect. It would probably make a good top dressing to wheat; but of that I have no experience, as I grow none. There is one caution necessary, in using it, in this manner, in summer, or warm dry weather; which is, to dilute it with three or four times its bulk of water, and, even then, to choose moist weather; otherwise, it turns grass, or any growing plant it is applied to, of a burnt like colour, and stops its growth; which, however, is soon recovered, on a good shower of rain; and a lively verdure succeeds. But some things it kills irrecoverably. My man had planted a whole potato, to see how many it would produce; when the stalks were pretty well advanced, he gave it a full watering with this stuff unmixed from the cistern: The result was, the stalks almost instantly fell; and, on examining them, he found them just above ground, as it were, bruised to a pulp, and, on taking up the potato itself, he found its texture destroyed, in the same manner as by frost. When properly applied, it has a very good effect on all garden stuff, especially leeks and onions, which it will raise very well without dung, by soaking the ground well with it in winter or spring, some time before sowing. If any tolerable good mould, broke very small, and in a dry state, were well soaked with it, and laid upon grass land in the spring, it would probably have a more durable effect than the liquid alone. This paper is already perhaps too long; therefore, I shall conclude with once more heartily recommending the subject to the attention of my brethren. L.

FOR THE FARMER'S MAGAZINE.

Extracts from FOURCROY ON THE PHILOSOPHY OF VEGETATION, *Translated and Abridged by a correspondent.*

(Continued from p. 60.)

PART IV.

Of the Influence of Light on Vegetation.

1. IT is a long established fact, that the solar light has an obvious and powerful influence on vegetation. All plants seem to seek for light, as they evidently lean or grow towards that side from which it shines. This may be observed where bulbous plants are reared on chimney-pieces, or similar situations, whence they uniformly bend towards the windows. It is likewise obvious in forests or thickets, where trees, growing close together, rise straight upwards in search of light; the more vigorous overtop the weaker, and at length kill them,—whereas trees growing singly, or at large intervals, spread out to considerable breadth. Hence, when it is wanted to have timber long and straight, the trees ought to be closely planted, and *vice versa*.

2. When growing plants are covered by wooden boxes, having a few fissures so as to admit air, they bend towards the cracks in search of light. Such as grow in vaults, subterraneous places, or mines, always stretch out towards the air-pits, and grow along the passages which admit any portion of light, however feeble.

3. All vegetation that takes place in the dark, is accompanied by phenomena that clearly prove the powerful effects of light, from the marked difference between such as enjoy that influence, and those which are deprived of its operation; as is manifest in those weakly plants that happen to grow beneath stones, among thick tufts of moss, in the subterraneous passages of mines, or when purposely reared in vaults or other dark places. In all such situations, vegetables acquire a weakly, soft, and aqueous texture; their stems and branches are slight, herbaceous, feeble, and almost devoid of taste, odour, or colour: their fibres, saturated with too much water, as if dropsical, never acquire a woody texture; their taste is always watery and insipid, and they never acquire any full aromatic odour or perfume. Such plants are termed *etioloted* or blanched.

4. Exactly similar effects are produced when the leaves of plants wrap up and cover each other from the light; whether this be in consequence of natural sheaths, or when the leaves are folded upon each other by art; as in lettuces, succory, cardoons, and other plants, tied up by gardeners on purpose to blanch them; and in cabbages, savoys, and the like. In all of these, the external

nal leaves which enjoy the light are perfectly green, while those within, naturally or artificially covered up and involved in darkness, are blanched or etiolated; they are thereby rendered white, soft, delicate, and tender, and lose the taste and flavour of the native plant in its green state, or retain these very slightly.

5. Such plants, on the contrary, as receive the most direct influence of light in the equatorial regions, abound in firm, hard, woody fibres, are highly coloured, strong tasted, and powerfully aromatic. Between the tropics is the native seat of hard woods, dark coloured, and often almost woody leaves, volatile oils, resins, camphor, aromatics, and spices; in short, of all the strongest tasted and most powerfully medicinal plants, and of all the most terrible vegetable poisons. This difference is very strongly evinced in our temperate climes, by the difference between the qualities of such plants as grow in the open air, receiving the whole influence of the light; and in their artificial cultivation, where light is carefully kept from them, as already noticed.

6. The influence of light is even manifested by the effects of lamps upon growing vegetables, according to the curious experiments of Tessier at Paris, and of Humboldt at Berlin. By those of Humboldt, it would seem that the presence of some other elastic fluids may, in part at least, make up for the absence of light, as will be noticed in the sequel. It is however certain, that, by sufficient multiplication of artificial light, the phenomena of vegetation dependent upon solar light, may be more or less nearly imitated.

7. The causes of those effects of light upon vegetation are not hitherto accurately ascertained by actual experiment, at least sufficiently to remove all doubt.—Some suppose, that the changes produced on growing vegetables by light, are in consequence of that element entering into actual combination with this substance.—Others believe that the light merely contributes to the decomposition of water and carbonic acid present in plants, thereby producing the fixation of the hydrogen from the water, and of the carbon from the carbonic acid, and the disengagement of oxygen from both, which flies off in the state of oxygen gas. In the sequel, substantial reasons will appear for considering the latter of these opinions to be most consonant to fact.

8. In whatever way it may operate, it is perfectly ascertained, that the following effects are produced on vegetables by light. 1. They have their temperature augmented. 2. Their power of absorption is increased. 3. The septic decomposition of their elements is resisted. 4. They acquire colour. 5. The production of oily, aromatic, and acrid substances or juices is promoted. 6. The disengagement of oxygen gas is occasioned. In general, their vegetative powers are rendered more active and vigorous.

PART

PART V.

Of the Influence of Air on Vegetation.

1. THE beneficial influence of air is not less obvious than that of light, on vegetation; and many who do not fully admit the before mentioned effects of light, readily acknowledge the indispensable necessity of air to this process of nature. All the phenomena connected with plants, clearly prove the usefulfulness and necessity of air for vegetation. The vigour with which they grow in free air, and their languor when deprived of it, or only scantily supplied, is well known.

2. When confined under a close receiver or bell glass, though all other circumstances conducive to vegetation be perfectly favourable, as soil, manure, water, temperature, and light, they languish and die sooner or later, in proportion to the quantity of air originally confined along with them, in reference to their own bulk. But if, when beginning to languish, they are removed from confinement, or if fresh air is admitted into the receiver, more especially oxygen gas, they quickly recover their pristine vigour, and grow with renewed strength. This difference may readily be observed on the great scale of nature, by comparing the languishing state and diminutive growth of the same species of plants in narrow confined gardens, with their vigorous appearance and large size in open situations; the weakly state and slender produce of corn crops, closely surrounded by trees, with their vigour and abundance in open plains; the marked difference of many plants, as growing in thick shady forests, and their height and strength on open grounds.

3. The cause of this influence of air on plants, is somewhat difficult to investigate. Atmospherical air abounds with so many substances of different kinds, that it is not easily determinable by which of these it contributes so eminently and indispensably to vegetation. Besides the two principal ingredients in its mixture, oxygen gas and azotic gas, and the small portion of carbonic acid gas which it always contains; atmospherical air dissolves a considerable quantity of water, various in its proportions according to circumstances. Owing to this complication, the investigation of the influence of air on vegetation, is almost a new problem in vegetable physiology; and several theories have been proposed on this subject, which have not hitherto been confirmed by experiment. Some have conceived, that the air penetrates into the substance of vegetables to support their life, by means of a kind of respiration analogous to the breathing of animals. Hales seems to have adopted this opinion from an experiment, in which he made atmospherical air to pass through the stems of plants, by means

means of the vacuum of an air pump at their lower extremities, their upper parts being in the free air. But this experiment is quite inapplicable to the phenomena of vegetation, since this vacuum, which occasioned the passage of air, can never exist in plants in a state of nature. There is no circumstance in the physical economy of vegetation which has any direct analogy with the respiration of animals.

4. Some naturalists have conceived that the air nourished plants, and that they derived the whole, or almost the whole of their food from the atmosphere; and, for this purpose, that the atmosphere required always to contain a proper proportion between its two elementary gases; as, when its oxygen gas is exhausted, which more especially contributes towards vegetation, the remaining air is no longer capable of assisting that process, and plants confined in it quickly die. They admit the necessity of renewing the oxygen gas of the atmosphere, for the purpose of fitting it to receive certain excrementitious transpirations from vegetables, by which the oxygen gas of the atmosphere is converted into carbonic acid gas; and they suppose that oxygen gas becomes even one of the alimentary principles of vegetables, by its absorption from the atmosphere. Both of these ideas may possibly be true, as experiments hitherto do not prove exclusively the truth of either *.

5. The necessity of air for vegetable life seems essentially to depend upon the presence of oxygen gas, as, from the experiments of Ingenhousz, plants may be made to vegetate in azotic and hydrogen gas, provided they contain a certain proportion of oxygen gas. From these experiments, it would appear that the oxygen gas, becoming the vehicle for receiving the excrementitious carbon disengaged from plants, unites with it to form carbonic acid gas, which may afterwards contribute towards vegetation, as will be seen in the sequel.

R. r. r.

(To be continued.)

* There seems some obscurity here in the language of our author. It would appear that, in one opinion, the oxygen gas of the atmosphere is considered as merely serving as a vehicle to remove the superabundant carbon from growing plants; whereas, in the other, the oxygen is believed to be absorbed from the atmosphere, exclusively as a pabulum of vegetable nourishment; while he concludes that, so far as experiments hitherto warrant, the oxygen gas of the atmosphere may contribute to vegetable life in both ways. *R. r. r.*

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On Ploughing Matches.

SIR,

I MUST beg leave to congratulate your readers, as I hug myself, upon having obtained so able a coadjutor as *Leonidas*, in my patriotic endeavours to establish the high merit or indispensable utility of *ploughing matches*.

His designation is appropriate; his grave oracular decision and sententious gravity clearly marking out the *Spartan*. But I recal the too familiar appellative of *coadjutor*. Such innate dignity of manner indicates a native title to command; I bend mine head to the dust before him, and (in Friday's token of submission to Crusoe) I thereon plant his foot. In short, I adopt him for my leader. Stationed together in the straits of Thermopylæ, we shall repel the inroads of barbarians, however numerous; whilst, secure under our protection, ploughing matches, like the Olympic games of Greece, shall proceed to be celebrated in undisturbed serenity behind us.

To very intelligent readers, to whom a slight hint suffices to convey the sense, and to whom more ample explanation becomes nauseous through superfluity, there can be no quality of writing more recommendatory than brevity. But, conceiving the bulk of your readers not to be of that description, I shall beg leave (as one more upon their own level) to bring the condensed reasoning of my master within their reach, by a little illustrative diffusion.

He grounds himself upon a few postulates, which your readers will readily concur with me in granting to him as truisms: That it is a good thing (to keep nearly to his own expressions) *to encourage workmen to aim at becoming more perfect in their business, and to acquire the habits of ploughing straight with an equal and proper depth, and with steadiness and expedition*; as also, that there should be kindled *a degree of emulation to excel each other in this important branch of husbandry*; and that a stimulus should be given to *workmen to make better ploughs*, and to *farmers to have better teams*.

If it could be supposed, Sir, that any of your readers should entertain the smallest hesitation in allowing any of these attainments to be useful, I am fully prepared to evince their utility by strict demonstration. Trusting, however, to a *nem. con.* universal acquiescence, and conscious of my incapacity to state these postulates in clearer or more appropriate language, I shall wave all attempts at proof or illustration.

With equal confidence, and, as I hope will appear upon proper

per illustration, with equal self-confidence, does my master state that *ploughing matches, when conducted with any degree of judgment, encourage* such attainments.

The *modus operandi*, by which ploughing matches produce their effect, is indeed, in a great measure, left by my master to be discovered by the reader's own sagacity. I, however, doubt not that he considers *the money premiums*, distributed at them, as an operative agent of considerable influence; although, with a dignified Spartan contempt of motives of mere pecuniary interest, he seems to have felt an indelicacy in even naming such a base object as *premium*. He only, in direct terms, specifies the *marked attention of the public* to ploughing as an agent *having good effects*.

I shall advert a little, in the way of illustration, to the efficacy of both these agents; the *expressed*, and the *understood*.

And, *first*, of the *expressed*, viz. *the marked attention of the public to the subject of ploughing*. And here I must remark upon a twofold operative—

1*st*, It is a most happy circumstance, that ploughing should, now, be held a subject of such consideration, as to be thought worthy of *the marked attention of the public*. Formerly, the ploughman, among the rational, like the goose among the irrational animals, was uniformly in use to be held up as the standard of stupidity; even while yet alive, he was confounded with the clods he turned over; his profession was held degrading, and was looked down upon with the petulant overcrowing contempt even of the weigher of raisins, the meter of tape-string, and the filler of the gill stoup. The importance of the profession itself, together with the degree of talent requisite in the expert professionalist, have now, however, arisen to their proper level in the public estimation; and through this happy revolution of sentiment, there no longer exists that discouragement to young men of spirit from embracing the profession—its degradation.

2*d*, The meed of public applause is so grateful to the human heart, that unquestionably, wherever men are made to act under *the marked attention of the public*, an emulation to excel will be excited in every thing generally esteemed excellent.

Without doubt, those who object to our principles as to ploughing matches, may allege that, as ploughing (at least in this country) is not generally carried on in secret, or under covert of a house, but for the greatest part in the open air, subjected to the observation of whoever chooses to look on, the motive of public notice and attention is sufficiently applied *of course*, and *independent* of all factitious publicity of positive institution. Those, however, who permit themselves to argue after this fashion, must

permit me also to observe, that such a mode of arguing betrays a strange ignorance of the principles of human nature; else they would never overlook that most certain of axioms, which at once overturns all such reasoning, viz. that *nothing is so ready to pass unobserved and unattended to, as that which is most obvious.*

Were not this axiom next to self-evident, it might be confirmed by a crowd of observations. Why, for instance, do great towns afford the most effectual concealment to villains of all descriptions, but from their publicity? And why are people in great towns less versant in public news than those in the country, but from their ready access to newspapers? The thief who robbed General Horne of his watch, upon Leith-Walk, in the twilight, and upon whom it could not be found, after a thorough search in the guard-house, to which he had been carried, after an immediate hot pursuit, all in full view; at last, upon the promise of interest being used for his pardon, shewed that the wonderful concealment he had had recourse to, was the holding it up in his hand. I recollect having once seen an able calculator puzzled by this simple question, *If a herring and a half give three-halfpence, how many can be got for elevenpence?* In fact, it was so obvious, that he overlooked it. Instances press upon me; but I spare the reader, where illustration is so superfluous.

In consonance to the preceding axiom, it consists with constant and uniform experience, that those professions which are carried on *most in secret*, are the very ones which are most exposed to public observation, and which have, of course, been carried to the highest pitch of excellence, through excitement of the ambition to excel, in consequence of such public attention. For, we certainly excel in every species of manufacture carried on within doors. And what is the reason? No sooner does a chaiseful of lady and gentlemen jaunters arrive at a resting place, than the business is, '*Come, let us go visit the manufactories.*' And the workmen, so frequently subjected to the examination of such exquisite critics, are of course stimulated to exert their talents to the utmost. With half an eye, one may easily perceive that it is for this reason, and not, as is pretended, *to prevent the workmen from being set idle in gaping at the visitors*, that many proprietors of manufactories affect a great shyness in admitting people to examine their works. The sly dogs well know, that this affectation of secrecy is the surest mode of insuring publicity; upon the principle of the eagerness with which we all desire what is forbidden—*nitimur in vetitum semper, cupimusque negata.*

This *marked attention of the public* supersedes entirely every use of *instituted publicity*; and it is for this reason, that we hear of no such thing as instituted weaving matches.

But

But though the powerful efficacy of this public attention upon the improvement of our manufactures, is self-evidently obvious, yet candour must oblige both Leonidas and myself to confess, that a certain degree of influence must be allowed to certain subordinate and inferior concurrent causes, which cooperate to the same effect; such, for instance, as the interest of the head manufacturer, which induces him, according to the best of his feeble judgment, to encourage in his workmen, by the premium of higher wages, *the production of the greateſt quantity of work, of the beſt quality, in the leaſt time*; together with the similar interest of the workman, in receiving these superior wages, upon these said conditions. Nevertheless, I am persuaded, every impartial person will agree with me, that *the marked attention of the public*, before specified, is—*the thing*.

Now, ploughing (in a manner the reverse of that of manufactures) being carried on, through the whole country, in the most public manner, in broad day-light, and in the open air, it must, of necessity, escape notice, conformably to the foregoing axiom, and cannot attract a marked attention from the public: *The wood cannot be ſeen for the trees*. By consequence, *do not we find that no ſuch thing ever occurs, as that of a ploughman amending his ſtyle of workmanſhip, from attending to models of ſuperior execution? And is it not obvious to Leonidas, as it is to myſelf, that no farmer ever attends to the difference of ploughmanſhip, upon his own and his neighbour's fields; that no ſuperiority of one ploughman over another is ever heard of, or ever ſuppoſed to exiſt; nor any difference of wage made, in reſpect of the ſuperiority or inferiority of the ploughmen hired?*

Where, then, the extreme obviousness of a subject causes it, in this manner, to be totally overlooked, *an inſtituted publicity* must be recurred to, in order to obtain to it the marked attention of the public. And hence, in this view, the indispensable utility, if not absolute necessity of the institution of *ploughing matches*.

I proceed, *ſecondly*, to illustrate the operation of the *underſtood* agent, whose ill-favoured name, the Spartan delicacy of Leonidas has forbid him to express.

Upon the operation of this agent, Leonidas has not at all expatiated—perhaps, as I have alleged, out of delicacy—or, perhaps, because after my very ample illustrations of this said subject of *premium*, which have already appeared in your work, he has deemed all farther remark to be superfluous. Could I, indeed, suppose, that any dubiety still remained, as to the powerful operation of this agent at ploughing-matches, I am perfectly prepared to demonstrate, in the strictest terms, that *the direct effect of premium is to encourage that to which it is awarded*. For, though there is, no doubt, a considerable perversity in human nature, yet (bating

a few unaccountable anomalies of character) it seldom *goes so crank* as to refuse being swayed by the common influence of interest.

The influence of premiums, in leading to the acquisition of any valuable attainment, if awarded *with any degree of judgment* in what is worth the attaining, is, I think, so self-evident, as to bear no dispute.

The only thing that can be disputed about, is the *quantum* of their effect, and (to use the concluding words of my friend Leonidas) the *abundant need of them.* For, as already observed in the case of manufacture, there do exist other concurring causes, of permanent never-ceasing operation, cooperating to the same end, —and to which our opponents may be disposed to ascribe such a supremacy of efficacy, as to render all other applications entirely superfluous, and therefore nugatory.

Being full blood of the family of A B C, and, indeed, his heir and representative, I shall make no apology to him for having spoken in his person. And, with compliments to my friend and master, Leonidas, I remain your constant reader,

A B C, jun.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Considerations on the present high Rate of Rents.

SIR,

THE present rage for farming, and the great and unprecedented rise in the rent of land, which is a necessary consequence of the former, have occasioned a number of speculations on the subject. That farming has been a profitable concern of late, is evident, from the spirit of competition which has arisen among that class of men, and the great extent of capital now engaged in agricultural speculations; and if we take into the account, the rise in the price of labour, the expence of the necessary utensils, and the heavy public burdens, with which they are now loaded, we must conclude, that their profits, for some time bypast, have been very considerable.

A sufficiency of food, is the first and most natural concern of man, in the civilized, as well as savage state of society. That a suitable profit should recompense the labour and industry of a class of men engaged in this necessary and important employment, is just and reasonable; for the actual prosperity of any state, and the comfort of its inhabitants, must depend, in a great measure, on the means of subsistence which the soil affords: hence, those who are employed in agricultural pursuits, may be viewed

viewed as the most usefully employed members of the community. That rivalship and competition should so much prevail among this class of men, may be adduced as no bad argument in support of the general prosperity of the state, since a ready demand for the articles of consumption produced by the farmer, is a strong presumption, that those who consume them are both well employed and well paid.

The rise of price, on every article of farm-produce, has uniformly, though not always regularly or steadily, accompanied the progress of commerce and manufactures; while the increase of the circulating medium has been in the same degree extending, and, in consequence, depreciating in value. Whilst these continue to proceed in their natural progress, and no violent convulsion, in the political or civil state of society, shall obstruct the stream, or vary its usual channel, we have every reason to hope that they will continue the same course, and with accelerated motion. But even the prosperity of states, like the individuals which compose them, has its different dates of youth, manhood, and old age, of a longer or shorter date, according to the destination and arrangements of superior wisdom.

Most of the lands let in lease of late, have been taken at double and triple the rents they paid twenty years ago. The principal cause of this extraordinary rise, may be traced to the prosperity and extent of our manufacturing and commercial pursuits, from whose widely-diffused influences, ample employment, and good wages, are afforded to the labouring classes of the community, in every line of life. These are now enabled to live more comfortably than formerly; and a brisk and steady demand, and greater consumption, from an increased population, of every article of food raised by the farmer, has been the consequence. Hence the latter has acquired a considerable share of capital, and is enabled to bestow a greater proportion of that in improving his farm; and his speculations in this way have yielded him a fair remuneration. The landlord, finding his interest advanced in receiving a higher rent, and his estate improved at the same time, by preferring such tenants, has adopted the system of throwing a number of his smaller farms into one; and, from the number of competitors this mode of policy brings forward, he has it in his power to exact the highest rent that his lands will yield. How far such policy will ultimately prove successful, time only will determine.

The rage for farming, at present, seems to run very high; and it is more than probable, that speculations of this kind have now got much above their level, when compared with other branches of business, and must be brought back to their proper standard,

at the expence, it is to be feared, of many who are now sanguinely embarking in such hazardous enterprizes.

The policy, however, of detaching from the pursuits of agriculture, that laborious class of men, the smaller farmers, may at last overreach itself, or miss the object it was meant to accomplish. If the system continue to gain ground, a number of persons, engaged in the cultivation of the soil, must of necessity be driven to seek employment, and the means of subsistence, from some other branch of business, or emigrate to another country, where they can pursue their native occupations, as has been the case in the Highlands. The number of actual farmers must then bear a nearer proportion to the farms to be let, and the competition must of course decrease; for, as these lands are taken at the highest stretch, the profits of the farmer must be greatly reduced; and, when brought again to the market, the candidates will be fewer, and the competition slackened, the gains of the farmer not having increased in the former ratio, while his expences in outlay, and public burdens, may probably continue to increase. The proprietors may eventually find it their true interest to lay out a certain portion of their lands in small farms, as they will thereby have the advantage of constantly producing a fair competition, from the number of hands who would persist in the pursuits of agriculture; at least, there would be a greater proportion of adventurers, whose capitals were equal to the undertaking of smaller than larger farms.

It seems now to be admitted as a fact, that the quantity of grain produced in Great Britain, with every advantage of improved cultivation, is not equal to the consumption of the inhabitants; and it appears rather a preposterous method of supplying the deficiency, to abstract from the occupations of agriculture a number of hands who are now employed in that line. When the subject is viewed in a political light, it is certainly not consistent with sound policy, to weaken the spirit of national patriotism, by rendering the attachment of the inhabitants less firm and binding, in depriving a large proportion of them of their possessions, and consequently, of much of that interest they naturally take in the prosperity and independence of their native soil. For it is to the hardy and independent class of rustics, rather than the sedentary and less robust inmates of the manufacturing towns, or the city, who are not attached to any particular spot, farther than good wages, and full employment allures them, that the country must trust for defence in the hour of danger. For the specious show of external prosperity, exhibited in the wealth and splendour of commerce, and the ingenuity displayed in the improvements and high state of perfection to which manufacturing industry has arrived,

arrived, will but feebly compensate for the want of that rustic patriotism and independence, so strongly characterized in the energetic lines of the poet,

> 'Ill fares the land, to hastening ills a prey,
> When wealth accumulates, and men decay.
> Princes or peers may flourish, or may fade;
> A breath can make them, as a breath has made:
> But a bold *peasantry*, their country's pride,
> When once destroy'd, can never be supply'd.' GOLDSMITH.

In whatever light the subject may be viewed, it will certainly afford great satisfaction to reflect, that the present rage for farming will vest a greater proportion of capital in the purchase of land, and in the cultivation of the soil, than usual. The great demand, and high prices, though often fluctuating market, for the productions of the soil, ought to induce proprietors to bring into a state of cultivation, every barren and unproductive part of their estate, which is capable of improvement. The present high and liberal advances in rent, made by the farmers, ought likewise to secure to them every comfort and accommodation, which it is incumbent on the landlord to grant; for the farmer, on the present terms on which he is obliged to form an agreement with his landlord, will have more occasion to turn his views to what is necessary, than what is convenient, in the management of his farm. When the occupier of the soil runs a greater risk, with less prospect of gain, the proprietor ought to grant every assistance, especially where his own interest is so materially concerned.

E——ll, 18th March 1806. J. P.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On the Prices of Provisions and Labour.

SIR,

THE numerous petitions of our manufacturers, against the late corn-bill, appear to have proceeded upon this principle, that a low price of grain would be accompanied by a corresponding low price of labour. That this position is not only false, but that the direct contrary is true, may be proved, not by theoretical reasonings alone, but also by an appeal to facts. Necessity is the mother of industry. The warm and genial clime, which spontaneously supplies the wants, and administers to the luxuries of its inhabitants, never fails to conduce strongly to keep them still in slothful indigence, and to repress every nobler faculty of the soul; while the inhabitant of the more barren region is obliged to labour for his support, and has the native powers of his mind,

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as well as of his body, roused and improved. Mr Hume, in his Essay on Commerce, directly ascribes the poverty of the common people in France, Italy, and Spain, to the superior richness and happiness of their climate. The very high price of labour in America, is a convincing proof that a low price of grain is not necessarily accompanied by a low price of labour. In America, the cheapness of land and of grain makes it easy for a person, as soon as he has scraped a few dollars together, to support himself and family, by purchasing a spot of land, and cultivating it for himself; and consequently, he will not labour for another person, without very tempting wages. Mr Turner, in his embassy to Thibet, describing the miserable and wretched appearance of the inhabitants of the district of Cooch Bahar, a country lying betwixt Bengal and Boutan, makes the following very just observations: 'Indeed the extreme poverty and wretchedness of these people will forcibly appear, when we recollect how little is necessary for the subsistence of a peasant in these regions. The value of this can seldom amount to more than one penny per day, even allowing him to make his meal of two pounds of boiled rice, with a due proportion of salt, oil, vegetables, fish, and chili or red pepper. The situation of this district exhibits a melancholy proof of different facts, too frequently united, the great facility of obtaining food, and, at the same time, the wretched indigence of the lower order of inhabitants.' p. 11–12.

The effect of a too great facility of obtaining food, in repressing the spirit of industry, is sufficiently apparent in our own country. In many of our small towns, particularly our little royal boroughs, this indolence prevails. The burgess who possesses a few acres, sufficient to keep him a cow, and to produce as much grain as barely to support his family, seldom thinks of applying, with the spirit of industry, to any trade or manufacture which might enable him to better his situation, but entails upon his son and heir, along with the paltry possession, the same spirit of slothful indigence; while the younger sons of the family, having no support of this kind to trust to, are necessitated to apply themselves to some profession, and often rise to prosperity and opulence. The case is the same in the country as in towns; wherever a bare sufficiency is enjoyed without exertion, there the peasant still paces the same dull round of indolence. The little farmer, who has long enjoyed his small possession at an easy rent, very often contents himself with plodding on as his fathers have done for centuries before him, reaping the scanty and unprofitable crops of worn-out and impoverished land. Remove him to another farm, at such a rent as only the improved modes of management can enable him to pay, his dormant faculties are roused, the spirit of industry

industry is awakened, and he often improves his fortune, and acquires that ease and comfort he never dreamt of in his former situation. Our present poor-laws seem better calculated to repress, than to encourage the spirit of industry. The person who has once received the weekly or monthly pension, knowing that he will still receive it, without any exertion of his own, is often contented with being kept merely alive; and will rather almost starve on his wretched pittance, than attempt to support himself by any industrious occupation. The price of labour, like the price of any other commodity, depends entirely upon the proportion between the demand, and the quantity of labour in the market. Whatever, therefore, tends, either to lessen the demand, or to increase the quantity of labour brought to market, must have the effect of lowering the price of labour; and, on the contrary, whatever tends to increase the demand, or to lessen the quantity, must equally have the effect of raising it. A low price of provisions, by increasing the facility of living, will decrease the quantity of labour brought to market, and, consequently, raise its price; and we have only to recal to our remembrance the years 1799 and 1800, to be convinced that scarcity has the direct contrary effect. In the latter year, particularly, the price of labour fell extremely low; but no sooner did plenty, accompanied by a low price of corn, return, than labour rose with rapidity, to a height till then unknown. It is a fact well established, in all our manufacturing districts, that, when wages are high, the operative hands, universally almost, work only for two or three days, and spend the remainder of the week in riot or idleness. The more the wages are increased, the less work is done. It is, therefore, the evident interest of our master manufacturers, that the price of provisions should not be too low, for if you increase the facilities of a labourer's living, you inevitably increase his temptations to indolence or debauchery. It seems generally agreed, that the average produce of Britain is not sufficient to supply its inhabitants with corn: a bounty on exportation, therefore, must be wholly ideal—though laws for the protection and encouragement of British husbandry are highly necessary. A superfluous importation of corn ought to be guarded against with the utmost care, for it would have the certain effect of depreciating the value of land, and ruining, not only the landed, but also our manufacturing interest. Owing to the depreciation of money, the price of labour is gradually advancing: it is, therefore, indispensably necessary, that the price of grain also should be allowed gradually to advance; and this can only be done, by increasing the rates at which importation is allowed; for, since we cannot supply ourselves, it must be the quantity of grain imported that will regulate the

the price in this country. Man is ſtill the ſame, in all countries, and in all ages; and a free importation would occaſion ſuch an influx of corn, and ſuch a depreciation in the value of all the neceſſaries of life, as would aſſimilate us to the natives of more genial and productive climes, and plunge the nation into a gulph of ſlothful indigence and miſery. Your conſtant reader,

Roxburghſhire. S. E.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

The Queſtion conſidered, Whether can the Highlands of Scotland be beſt improved by the reſident Inhabitants, or by Farmers brought from other Diſtricts?

"Audi alteram partem."——OLD ADAGE.

SIR,

ENTERTAINING ſentiments very different from thoſe profeſſed by many others, concerning the moſt ſuitable means of improving Highland huſbandry, without injuring the public good, I intend, at this time, with your permiſſion, to ſubmit a few remarks on that important ſubject to the conſideration of your readers. The Farmer's Magazine is an excellent *arena*, for combatants to ſport their religious, moral, political, and *mora-politica*-agricultural opinions; and, there, queſtions may be calmly agitated, which, in more licentious times, would have produced blows, and perhaps all the horrors of civil warfare. Were I younger than I am, and more able for a conteſt of this kind, I would throw down my gauntlet to the greateſt hero, and ſhed the laſt drop of my ink in defending the poor ill-treated Highlanders, whoſe removal ſeems a neceſſary conſequence, were the meaſures propoſed by our modern political economiſts carried into execution.

Before I proceed further, I beſeech you, Sir, to recollect what was the ſituation of Highland diſtricts in former times. The chieftain of each clan was then viewed as the father of the whole. He was their leader and commander in time of war, their counſellor and director in time of peace. He ſuperintended and watched over the concerns of the tribe, which, in fact, was neither more nor leſs than one family ſcattered over a diſtrict of country, extenſive in ſome inſtances, and limited in others. During the continuance of this ſyſtem, which reſembled the patriarchal one, individuals could rarely be neglected; becauſe every branch was ſo linked together, that the ſmalleſt and weakeſt participated of the common ſtock or fund, though in a different degree,

gree, with thoſe of a ſuperior deſcription. To the ſubverſion of this ſyſtem, the preſent diſtreſſes of the Highlanders may be attributed. The bond of connexion which formerly prevailed betwixt the higher and lower ranks, is broke aſunder, whilſt a new one, perhaps in many caſes improperly formed, has not come fully into action. Before ſociety was ſufficiently moulded and incorporated under the new ſyſtem, diſſenſions naturally aroſe, eſpecially on the eſtates of proprietors who were influenced more by the *amor pecuniæ*, than by the *amor patriæ et populi*. The people, deprived of the chieftain's foſtering care, and thrown into a new ſituation, without being properly provided with the means for encountering the difficulties which aroſe out of it, of courſe, became diſſatisfied. Hence emigration to America, or migration to the Lowland diſtricts, ſucceeded; and, in ſeveral inſtances, removals were ſo numerous, as to threaten a total change of inhabitants.

So far as I have gone, there is not much difference in opinion betwixt me and the gentlemen who diſcuſſed the queſtion propoſed by Sir George S. Mackenzie, Bart. We almoſt agree as to the paſt and preſent ſituation of the Highlands, though I am afraid we differ widely reſpecting the meaſures which, under exiſting circumſtances, ought to be uſed for improving the country in ſuch a way as may be conducive to the public good; and, I am bold to ſay, that, if the latter is neglected, no *real* improvement can be executed. Notwithſtanding that the times are changed, and that the ancient ſyſtem muſt yield to a new one, it does not follow that this change of ſyſtem muſt be accompanied by a change of inhabitants, or that the preſent cultivators of the Highlands muſt be converted into hewers of wood and drawers of water for a new race or claſs of farmers, to be imported from the ſouthern and better improved diſtricts of the iſland. Neither does it follow, from the moral and phyſical ſtate of things, that the aborigines of the country are unqualified for cultivating and improving it; though, on the correctneſs or juſtice of this aſſertion, reſt the whole principles and meaſures ſuggeſted by your correſpondents. It ſhall therefore be my buſineſs to ſhow, from ſeveral conſiderations, that the doctrines inculcated by theſe gentlemen, are fallacious and unfounded; and if I can do this ſucceſsfully, I will be warranted to maintain, that their plans for promoting Highland improvement, are altogether viſionary;—nay more, I will be warranted to characterize them as inimical to the welfare of the people, and hoſtile to the public good.

In the *firſt* place, it is fully admitted, that the Highland diſtricts, at the preſent moment, remain in a ſtate comparatively unproductive, and that much improvement is neceſſary before either proprietors

proprietors or the public can enjoy the advantages which they are capable of yielding. The truth of these two points I feel equally strong with the most sanguine of your correspondents, though it deserves consideration, that the main question is altogether unconnected with these matters. In short, the basis of the whole dispute is, whether the Highlands can be best improved by the resident inhabitants, or by cultivators imported from other districts. Your correspondents, when they recommend such an importation, indirectly maintain, that the resident cultivators are incapable of accomplishing the improvements that are wanted. My creed is composed on principles altogether the reverse. I look upon the Highlanders as brave and virtuous, and, when working for themselves, as an industrious set of people. Moreover, I firmly believe, that, under proper encouragement, the Highlands would be much sooner improved in their hands than generally imagined. Under imperfect security, and fettered with arbitrary bondages, a considerable advance has already been made in several districts. Give them a degree of security, equally strong as what is possessed by Lowland cultivators, and make their situation or condition equally independent with that of their more fortunate southern neighbours, and I will venture to foretell, that the like beneficial consequences must necessarily follow. By whom but the natives have the limited improvements been executed which are discernible in various places? And if they were capable of doing a part, when freedom was unknown amongst them, and when security was withheld for enjoying their possessions till the fruits of improvement were reaped, then, according to all the rules of argument, it may justly be maintained, that much more will be done, and to infinite better purpose, were leases granted, bondages abolished, and suitable accommodations provided for the inhabitants and their stock. I ask for no more than what is so liberally recommended by your correspondents for the encouragement of South-country farmers. No more is required, to make the Highland vallies, and the sides of the mountains, to the height of 500 or 600 feet above the level of the sea, a Switzerland—a Wales—a Paradise. Were that respectable nobleman Lord Selkirk, instead of carrying away the heart's blood of the Highlands, successfully to employ his eloquent pen, in recommending to the great Highland proprietors, to grant their people the same encouragement to industry which he gave to his colony of emigrants, there would be employment for every person at home, and no occasion would remain for further emigration.

In the *second* place, it may be inquired, how, and in what manner, has every country been improved? or, what were the steps originally taken to change its state from one of nature to

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one of artificial culture? Arguing on this head, in an analogical way, (and, under the circumstances of the case, this mode is strictly applicable), it may be shown, that the resident cultivators of the Highlands are better qualified for carrying forward the improvement of the country, than those which might be imported from other places. The truth of this will appear from the following considerations.

1. Every part of Britain, with which we are acquainted, has been brought into a state of cultivation by its actual possessors, without importing either capital or knowledge from other places. To accomplish that object, natives are better fitted than strangers, from their superior local knowledge; and, hence, it rarely happens that a farmer, who removes from one district into another, ever does any good, till he is sufficiently acquainted with the nature of the soil, the climate of the district, and the varieties of weather which prevail within its bounds. The first efforts to improve a country, rude and uncultivated, are feeble and languid. The cultivator begins with those fields that are nearest to his residence. After having subdued them, he gradually extends his exertions to more distant parts; and as his means and abilities increase, so do the rectitude of his culture, and the bounds of his possession increase likewise. It requires, however, a long period of time to bring any country into a state which, with the least semblance of truth, may be characterized as perfectly improved. Several generations may pass away, without any thing like perfection being attained. Even the boasted county of East-Lothian, which to be sure now appears to be kept in something like garden culture, did not reach that condition in less than six or seven centuries. Originally it was all in small farms, and arranged, not more than sixty years ago, into outfield and infield. The latter portion consisted of the first improved fields, whilst the former was made up of those more recently brought into a state of cultivation, or those which the first cultivators had not thought worthy of their attention. One of the first farms in that county, from a deed lately in my hand, appears, in 1536, to have been possessed by no fewer than ten farmers, who each had fifteen acres of infield, and something more than double that quantity of outfield. Now, if East-Lothian, which is considered as one of the pattern counties of Scotland, was gradually brought into its present improved state by the efforts of its native cultivators, we have no reason to doubt, but that similar efforts in other districts will be followed by the like desirable success.

2. As no country can be brought at once into a state which, in the most distant degree, resembles any thing like perfect improvement, every recommendation which carries in its face an idea of perfection

perfection being attainable in the first instance, must be viewed as preposterous and absurd. Were a farmer to commence his operations in a rude Highland district, on a large scale, or in the way and manner recommended by some of your correspondents, the issue, and that not at a distant date, may easily be figured. These gentlemen, in their rage to improve, neglect to take local circumstances into consideration. They also forget that rural improvement must be a gradual affair; and that as it takes nine months to bring a man into this world after he is begotten, and that twenty years more at least must elapse before his understanding is sufficiently maturated for acting his part in life, so, in like manner, agriculture must remain in a state of childhood for many years, before it possibly can arrive at a state of manhood. As in this age, children in their teens often suppose themselves possessed of more wisdom than is gained by those who have been taught in the school of experience, so those who suppose that the art of husbandry may all at once, or even in the space of a few years, be brought to perfection in any district, cannot be charged as enjoying the greatest portion of understanding.

3. If we shall suppose that the native Highlanders at this time are not further advanced in improvement than the inhabitants of the Lowland districts were a century ago, still this does not afford any reason to believe that their efforts to improve, all circumstances considered, would not be equally successful, were they favoured with the like assistance and protection as has been conferred upon their southern neighbours. The picture which you drew, Sir, in the note upon the essays offered for Sir George Mackenzie's premium, may perhaps be too high coloured in some respects, and more applicable to the state of Highland tenants several years since, than at the present moment; yet there can be no doubt, but that security of possession is wanting in numerous instances. You who have said so much in favour of leases, must acknowledge that, where none are granted, there can be no encouragement to improve; and that, even when granted, if fettered with bondages and restrictions, the object will most likely not be gained. Without the security of a lease, neither the Highlands, nor any country whatever, will be improved. This is allowed by all your correspondents; therefore, to say any thing more on this head, would be altogether superfluous.

4. It has been alleged by some persons, that the Highlanders are a lazy set of people, and that they cannot, from their natural dispositions, be animated to work or industry like the other inhabitants of the island. This may in some respect be true, when applied to their present situation; but is very different from fact, when brought to the test of general experience. When a Highlander

lander works for his own profit, there is not a more induſtrious character in the univerſe; and this was ſufficiently recognized at the time when thoſe people were generally employed as barnmen in the ſouthern diſtricts, before thraſhing machines were invented. Under preſent circumſtances, a Highlander at home is poorly fed and badly treated; this ſinks his ſpirit as a man, and of courſe abates his exertions in every reſpect; but give him independence, inveſt him with the ſecurity of a leaſe, and free him from bondages and reſtrictions, his exertions will keep pace with thoſe of his brethren in any part of the iſland.

In the *third* place, The loſs which the country would ſuſtain, were the Highlanders to emigrate in conſiderable numbers, as muſt be the caſe were a foreign race introduced, will form an important conſideration with every one who eſtimates the ſtrength of a country as conſiſting in the number of its inhabitants. Were your correſpondents' opinions carried into action, it is evident that the Highlands would be voided of all their inhabitants, except thoſe of the firſt and loweſt claſſes; becauſe none would be wanted, proprietors excepted, unleſs thoſe who filled the offices of menial ſervants. The injury which the country would thus ſuſtain is incalculable, though it might be eaſily averted, were a proper ſyſtem introduced by proprietors. That their conduct has hitherto been thoughtleſs and imprudent, I am not diſpoſed to deny. They wiſhed for high rents, yet would not afford that encouragement or ſecurity to the tenantry, without which high rents could not be paid. It is to be hoped, however, that they will, ere long, ſee their errors, and be convinced that, unleſs their tenantry are flouriſhing, their eſtates can never be improved.

But let me place this ſubject in another point of view, wherein the feelings of every perſon poſſeſſed of humanity muſt neceſſarily go along with me.

Take into conſideration, that the intereſt of the ſtate is not only concerned in retaining the actual cultivators of the Highlands, but that humanity would be violated were they removed to make room for another deſcription of people, who, if I am right, are imperfectly qualified for executing the improvements that we all acknowledge as deſireable to be made. Here I ſhall deſcribe the progreſs of one emigration, part of which I witneſſed; and oh, that I could paint the detail in ſuch glowing colours as might carry the like conviction to the hearts of all your readers, as then was impreſſed upon mine!

The inhabitants of one diſtrict were required to pay an augmented rent for their poſſeſſions, on which, at the time, they barely kept ſoul and body together. Perhaps a proud recollection of

their kindred to the chief, of their bearing his name, of the battles they had fought abroad and at home under his banners, made the ſudden demand for money go the worſe down. They therefore took the unanimous reſolution of ſeeking a new habitation in the wildeſt regions of America. They, however, firſt ſent a deputation to London, to try if Government would extend its parental care to them, by the adoption of ſome general meaſures for the preſervation of their race. But the evil was then only beginning, and had not grown to that height which has ſince occaſioned the interpoſition of Government. Finding their caſe hopeleſs, their deputies returned from London by Glaſgow, where they hired veſſels to tranſport 500 people to Canada; and the whole diſtrict took their departure. Men and women in the laſt ſtages of life, the grown men with their pregnant wives, their children running at their feet and clinging to the breaſt,—all, all took their departure, caſting many a longing look to their well known and favourite mountains. Thoſe who witneſſed the embarkation, deſcribe, in affecting terms, the manly tears ſtarting from the eyes of the men, the howlings and lamentations of the women and children, in terms that leave no room to doubt the people's attachment to their native ſpot, nor their deep regret at being compelled to leave it. I could not deſcribe thoſe unhappy people's ſufferings on a long voyage through a tempeſtuous ocean, nor the miſeries and hardſhips they experienced on landing in a ſtrange country, as wild as that they had left, without leading the reader to diſcover the particular emigration I deſcribe, and expoſing an individual proprietor to more than his ſhare of blame. This is no part of my object in the above deſcription, which is a faithful one, chiefly intended to diſprove aſſertions I have frequently heard, that the native inhabitants of this mountainous country leave it without regret. All travellers atteſt, that wild and mountainous regions have more attractions for their inhabitants than plainer and better cultivated countries. But the attachment of man to the ſpot where he ſpent his early years, is one of the characteriſtic features of mankind. No doubt this ſentiment owes much of its force to the moral attachments contracted there. When our parents, kindred, and friends are diſperſed, our native ſpot becomes a deſert, and an object of gloomy diſguſt; we quit it without regret, to accompany thoſe who rendered it dear to us, were they even to remove to the moſt inhoſpitable and moſt diſtant regions of the earth.

Thus I have ſubmitted to your readers a few conſiderations in favour of the preſent cultivators of the Highlands, from which it may appear, 1ſt, That as the Highlands, to a certain extent, have already been improved by the natives, even in the face of numer-

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ous obſtacles, there can be no doubt, were theſe obſtacles removed, and ſuitable encouragement beſtowed, of their capability to improve the whole, ſo far as natural circumſtances permit improvement to be executed.

2*dly*, That the natives of every country, from ſuperior knowledge of its ſoil and climate, are better qualified to forward artificial culture than ſtrangers brought from other diſtricts; and that the natives of the Highlands are neither morally nor phyſically diſqualified for improving the land of their forefathers.

3*dly*, That the ſtate would receive conſiderable injury, were Highland cultivators removed to make room for ſtrangers, whilſt humanity would be violated, were ſuch a material change in the rural ſyſtem of the Highlands adopted by the generality of proprietors. If I am right in theſe particulars, it follows, that the plans of your correſpondents are viſionary and deluſive; nay, more, that they are inimical to the welfare of the people, and hoſtile to the public intereſt.

Suffer me now to urge a ſingle hint for your own conſideration.

The bias that may be given to the public mind through the medium of a popular publication like the Farmer's Magazine, ſhould render you exceedingly cautious concerning the doctrines or ſyſtems recommended, eſpecially where the ſubject is of importance, or regards the happineſs and comfort of a numerous body of the people. I am ſatisfied that much good may be done by ſuch a publication, but I am equally ſatisfied that much evil may alſo be committed, ſhould an erroneous direction be taken in its execution. I beſeech you, therefore, to reconſider the queſtion, and to judge upon the contents of this letter with candour and impartiality.

In the like friendly manner, allow me to offer a caution to the honourable Baronet, with whom the queſtion in ſome meaſure originated. He is a young gentleman of ſpirit and enterprize, capable of doing much good to the community, and one for whom I entertain great perſonal reſpect. May I therefore expreſs my earneſt wiſhes, that his endeavours will be reſtricted to objects uſeful to the ſtate, beneficial to himſelf, and tending to promote the happineſs of thoſe whom Providence has placed under his care and protection. That ſuch are the objects which animate his active mind, I firmly believe; but, with the beſt intentions of being uſeful, the wiſeſt people may go wrong in applying the neceſſary means. Highland economiſts are divided into two parties, each of them obſtinately wedded to their own opinions, and ſhewing already, in ſome inſtances, a contempt for each other. The honourable Baronet alluded to, however, poſſeſſes more liberality of ſentiment than to throw aſide this letter, or to treat its contents with contempt, merely becauſe they may differ from

preconcived ideas. I hope that what I have ſtated with temper and moderation, will be conſidered by him with ſerioufneſs and attention; but, ſhould theſe opinions be diſregarded, I will feel the conſcious ſenſe of having done my duty on this occaſion. The ſide I eſpouſe, if not the ſtrongeſt, is aſſuredly an honourable one. I ſpeak in defence of a people who have been a tower of ſtrength to the Britiſh empire, but who, alas! have had few advocates to defend them when attacked at the point where they only were vulnerable; and ſhould my feeble arguments in their behalf be accompanied with the ſlighteſt ſucceſs, I ſhall always regard the day devoted to this purpoſe as the moſt fortunate æra of my life. I am reſpectfully, yours, &c. SENEX.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On Change of Seed.

SIR,

OATS and peas are natural to Scotland, and no change from more ſouthern climates are neceſſary. But I have reaped great benefit from bringing my ſeed wheat and barley every year from Kent, Berkſhire, &c. The elevation of my farm is high; four hundred feet, they tell me, above the level of the ſea. I uſed to get the beſt Carſe of Gowrie wheat for ſeed. My crop was very ſmall in the grain; indeed, more like rye than wheat. But by Kentiſh or Eſſex ſeed, it is much enlarged, and makes fairer and better flour, and ſells for little leſs than Carſe of Gowrie wheat. The ſame obſervation is applicable to my barley. Give this a place in your Magazine; and oblige yours,

MUTATOR.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Magneſia not hurtful to Vegetation.

SIR,

I BEG leave to expreſs my obligations to your Banffſhire correſpondent, for having brought forward the original documents on which the alarm reſpecting the deleterious effects of magneſia has been founded. But though I give full and implicit credit to the ſtatements both of *Mr Smithſon Tenant*, and of your correſpondent, I am diſpoſed to draw concluſions from their premiſes very different from thoſe which have occurred to them.

It appears from Mr Tenant's experiments, that plants grew in the magneſian, and in the common limeſtone, when reduced to powder,

powder, equally well as they would have done in sand. In this case, I presume, both the lime and magnesia were in the state of carbonate, or saturated with what was formerly called fixed air, now carbonic acid. It appears, then, that the carbonate of magnesia, even when combined with the carbonate of lime, exerted no pernicious influence on the growth of plants.

It was only when the carbonic acid was expelled, by burning the stone, that the deleterious properties of the magnesia began to manifest themselves. Now, I do not see how pure magnesia can exert any influence whatever on the growth of plants. It is nearly insoluble in water, and hence cannot enter into their roots. It recovers its carbonic acid much more slowly than lime; and unless it meets with some vegetable, animal, or mineral acid in the soil, with which it may combine, and become soluble, it is only after it has combined with an excess of carbonic acid, that, like lime, it becomes soluble in great quantity, and can enter, with water, into the composition of plants.

But it is unnecessary to enter into any theoretical reasoning to account for the facts stated by Mr Tenant. It is well known that different soils require a very different management in the application of lime. Some soils would be much benefited by small doses frequently repeated; but would be utterly destroyed by an excessive application. On other soils, again, it is hardly possible to lay too much lime. But I shall endeavour to illustrate this position, by stating two cases in point, which fell under my own observation.

In the neighbourhood of Stirling, soils are distinguished into *carse* and *dryfield*. The carse is a tenacious alluvial clay, which occupies the extensive plain through which the Forth performs his whimsical meanders. It had been an immemorial practice to lay great doses of lime on this soil; but my father was the first person, in the district north-west from Stirling, who ventured to put lime on dryfield land. His soil had been mostly formed from the decomposition of red and brown sandstone, and was a friable loam inclining to sand, and in some cases to gravel. A field being fallowed, and put in good order, the lime-shells were dropped over it in heaps; and, after they had slacked in the air, the lime was spread over the surface with spades. The same quantity was applied, and the same mode of application was adopted, that had long been practised in the carse lands. Wheat was sown; but except in a few spots, which had escaped an excessive dose of lime, none grew. It was long before this field recovered its fertility; and the bottoms of the heaps remained steril during many years. The opinion of the people there, that lime would destroy dryfield land, was completely confirmed.

But the failure of his first experiment had no effect upon my father. In his future operations, he slacked his shells beside a pool of water, and then spread the powder equably, and in moderate quantity, from carts. The effects were both striking and highly beneficial.

The other case occurred in Lanarkshire. A flat piece of land, consisting of what farmers call a cold till, being mostly formed from the decomposition of blaës, and other clay strata which usually accompany coal, was contiguous to a rising ground, consisting of what farmers would call a sharp turnip soil, in some places shallow, and incumbent on red and brown sandstone. About two thirds of each of these pieces of ground had been limed on the sward, while in pasture, in the heap way, already described. The remainder of both was limed, by spreading the powder from shovels. They were both ploughed at the same time, and sowed with oats. Where the lime heaps had stood on the till soil, the crop grew with the utmost luxuriance, and continued green after other parts of the field were ripened; but where the heaps had stood, or an excessive dose had been applied to the other soil, nothing grew at all; and this distinction remained clearly marked, not only while the fields remained in crop, but even after they were thrown into grass and pasture. The parts limed by shovels, exhibited an equable fertility, though greatest in the till soil where most lime had been applied, and diminished in the other, where more than a certain quantity had been used.

This limestone contained a small portion of magnesia, though, not apprehending any evil from it, I was at no pains to ascertain its proportion.

It is not stated that any bad consequences resulted from applying the magnesian limestone of Doncaster in moderate quantities; but the contrary. In the cases I have stated, it appears evident, that the opposite effects of the lime did not arise from magnesia, or any poisonous ingredient whatever in its composition. The effects can only be ascribed to the opposite qualities of the soils; one requiring a very large dose, and the other being only capable of melioration from a very moderate one. In short, what added great fertility to the one soil, was found utterly to destroy the fertility of the other. I am therefore inclined to think, that the pernicious effects of the Doncaster lime are not to be ascribed to magnesia, but to the quality of the soil to which it was applied, which rendered it incapable of receiving a large dose. But as I mean to shew, positively, that magnesia, instead of being a poison, is a food of plants; to account for all the facts stated by your correspondent, I am inclined to admit, that an overdose of this substance may prove more injurious to certain soils than an overdose

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of lime. Magnesia, and lime, and indeed any of the primitive earths, are known to be, of themselves, the most infertile of all soils. Though no soil is fertile without lime, its excess produces sterility; and the most fertile soil is formed from a variety of the primitive earths, combined in certain proportions, yet unknown. It is extremely probable that a certain proportion of magnesia, as well as of lime, contributes to the fertility of soils; though there may be some soils which an overdose of magnesia may more readily injure than an overdose of lime. From this supposition, I am disposed to account for the fact, stated p. 150, that lime, which contained two parts of magnesia to three of lime, proved injurious, while an equal quantity of pure lime proved beneficial: not that the magnesia was hurtful in itself, but that the soil might have been previously saturated with it, so that a new addition proved hurtful. In all cases of this sort, the nature and qualities of the soil should be examined and stated, as well as of the substances applied to it. From the facts I have stated, it might as rationally be inferred that lime, as that magnesia, was a poison to plants, when applied to certain soils. There are certainly soils where an overdose of lime will prove as injurious as an overdose of magnesia.

But that magnesia, so far from being a poison, is a pabulum of plants, or promotes their growth, in addition to the facts adduced in the paper which forms the subject of your correspondent's criticism, may farther appear from this circumstance—that the refuse of magnesian works, in this part of the country, is eagerly sought for and applied as manure. Are we to suppose farmers so blind and stupid, as to persevere in applying poison to their crops, in place of nutriment?

If any doubt is entertained respecting the accuracy of the experiments alluded to in my former communication, I shall proceed to detail them in the author's own words. They were made by Andrew Steele, Esq. W. S. at the time the alarm about magnesia was at its height, and had found its way into your useful work.

'On 26. April 1801, I sowed two pots, containing the

1st, $\frac{1}{15}$ magnesia, the rest earth.

2d, $\frac{1}{15}$ lime, the rest earth.

'The plants in the pot containing magnesia, I find recorded in my book of experiments, throve better than those in that which contained the lime.

'This might arise from some particular and imperceptible circumstances; but I esteemed it sufficient for my purpose to have ascertained, that magnesia is neither poisonous to the seeds, nor obstructs the growth of grain.

'The same year I tried magnesia spread on the surface of grassy turf, and an equal quantity of lime spread on a similar extent of other grassy turf; but could discern no difference in their effects during the summer.'

After we had considered your correspondent's criticisms, the same gentleman, in conjunction with myself and others, instituted a new set of experiments.

On 22. May 1806, six pots were sunk in a garden plot, and each had inserted nearly an equal number of the seeds of oats and peas.

No. 1. The standard, contained simple earth.
2. Magnesia, by measure $\frac{1}{12}$ mixed with earth.
3. Do. — — $\frac{1}{6}$ Do.
4. Sulphate of magnesia $\frac{1}{10}$ Do.
5. Do. — — $\frac{1}{20}$ Do.
6. Muriate of magnesia $\frac{1}{10}$ Do.

This 30th of June 1806, the peas are not so thriving in any of the pots as in Nos. 2. and 3., which contained carbonate of magnesia, or the *magnesia alba* of the shops. They are not so vigorous in No. 2., which contained only $\frac{1}{12}$ of magnesia, as in No. 3., which had $\frac{1}{6}$, where they are more than a foot in length. This shews, that magnesia is analogous to lime, in powerfully promoting the growth of leguminous crops.

The oats in No. 2. are taller, more vigorous, and of a deeper green, than in No. 1. In No. 3., they considerably surpass the two others in these particulars.

This clearly shews, that carbonate of magnesia powerfully promotes the growth of oats and peas; and that, in this particular case, the greater the quantity applied, the more striking the effect.

Nos. 4. 5. & 6. remained long dormant, probably owing to an excessive dose of the magnesian salts. The oats in No. 6. first began to spring; and, though not so tall, are vigorous, and of a lively deep green colour. This shews, that though muriate of magnesia may be applied in excess, it is not in itself hurtful, but beneficial, to vegetation.

The oats in No. 5. have lately begun to spring; and those in No. 4. are now making a rapid progress. Their retardation does not shew that the sulphate of magnesia is hurtful; but that too much of it has been applied.

I suppose earthy salts, especially those of magnesia, operate chiefly by their strong septic power, in promoting the putrefaction, and converting into nourishment for plants, those animal and vegetable substances which exist in the soil. It is well known, that sea-salt, which is much contaminated with muriate of magnesia, instead of preserving, promotes the putrefaction of meat,

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and especially of fish. It is also probable these earthy salts may promote vegetation, by their deliquescence and attraction for moisture. This remark is particularly applicable to the muriate of magnesia, whose plants are now making a very rapid progress, and the earth seems moist.

But whatever errors we may commit in accounting for the mode by which these substances operate, I think the facts adduced clearly establish this position,—That magnesia, and most, if not all of its saline combinations, so far from being hurtful, are beneficial to vegetation, if used in due proportion.

I beg leave to correct a mistake of your correspondent at the bottom of p. 151. When I formerly quoted alum as a poison to plants, I did not mean the alum of commerce, which has a portion of alkali in its composition. Though some have asserted that such alum is found in the earth, it never occurred to me, either in the mineral strata, or in soils. The alum, I meant, is sulphuric acid, combined with alumina or pure clay, which abounds in some soils, and many subsoils, and of which there are many extensive mineral strata. To this, alkali being added in the process of manufacture, the alum of commerce is formed.

With regard to the imperfection of my mode of purifying muriatic acid, mentioned p. 152, I certainly did not propose that mode as the best, but as the only one generally within the reach of a person who is not provided with a suitable chemical apparatus. If the muriate of barytes be costly, the quantity necessary is commonly very small.

Whether the dispute concerning the analysis of limestone was, or was not, properly introduced iuto your Magazine, I shall not take upon me to decide. I was absent from the country at the time, and had no hand in its introduction. But having observed that it seemed to have a reference to some operations of mine, I was only anxious to explain my mode of proceeding; leaving others to judge whether I was right or wrong. After all, from Mr Low's account of the matter, it appears my ingenious friend Sir George Mackenzie and I had been disputing without any sensible difference. He operated upon a random specimen; I upon specimens from the top, middle, and bottom of the quarry. Had we operated upon the same stratum, I doubt not but we would have exactly agreed.

But I am far from thinking, with your correspondent, that the generality of farmers are precluded, by their situation, from understanding the principles of chemistry, or of any science which may prove useful to their profession. I know several practical agriculturists who are well versed in chemistry, and can conduct such operations as may tend to illustrate the principles of agricul-

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ture with the greatest exactness. I doubt not but it consists with your knowledge, that the present race of farmers are better educated, and more intelligent, than their predecessors. The unparalleled circulation of your work, which has for its object to investigate the principles, and to improve the practice of agriculture, among agriculturists of every description, may be appealed to as a proof that a thirst for knowledge is almost universal among that class of men. Your Banffshire agriculturist himself may also be appealed to, who, if he be not a philosopher who occasionally relieves the fatigues of study by holding the plough, has evidently, amidst his rural avocations, found leisure to master several very difficult branches of science.

In my younger days, I knew some old-fashioned lairds, who regarded the poverty and dependence of their tenants as their wealth; and considered every thing which the skill or enterprize of the tenant might add to himself, as something taken from them. Were such characters, with all their affectation of dignity and importance, now to rise from their graves, they would rise only to be laughed at. Experience has clearly evinced, that where the tenant's possession is most secure, the rents are highest, the soil most productive, and the wealth of the tenant, comparatively, greatest. The old maxim, 'That a poor and dependent tenant makes a rich laird,' is now reversed by the incontrovertible argument of experience and fact. As our farmers are every day rising in intellectual ability, they are also rising in rank and respect in society. Were the mischievous cubs, so ably described by your Eddlestone correspondent, which the feudal system littered in her expiring agonies, and which now find shelter nowhere but in the bushy wigs of our lawyers; were these unkennelled and hunted down, our farmers would acquire that rank and respect in society, to which the importance of their profession entitles them, and the general good requires.

As our farmers rise in the scale of independence, they are found to rise in the scale of intellect, and in laudable curiosity to investigate the principles of their art. I can therefore see no just ground for excluding scientific disquisitions from your work, provided their object be to illustrate the principles of agriculture. New ideas excite people to think and inquire; and, thus, what may at first appear difficult to some, soon becomes easy and familiar to all. Every one knows the great improvements our manufactures have received from the discoveries of chemistry and other sciences. Agriculture comprehends all the physical sciences; and it cannot attain its utmost perfection, until they are all combined, and rendered subservient to its illustration.

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I admit, with your correspondent, p. 153, that there are many cases where it is necessary to call in the assistance of persons who have made science their particular study; but, in such cases, it is the interest as well as duty of the landlord, and not of the farmer, to call for such assistance. I have the honour to remain, Sir, your most obedient, &c.

Edinburgh, 30th June 1806. JAMES HEADRICK.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On the Importance of Barley and Bear in the North Highlands, and in Scotland in general.

SIR,

BARLEY, or bear, is a grain most favourable to the best culture of the soil. It is late sown, and early reaped; and therefore admits of the land being in the cleanest and most perfect tillage. It follows a green fallow with great propriety, and comes before sown grasses. In short, to discourage this grain is to hurt the agriculture of Scotland.

In late and bad seasons, barley and bear are our best ripening crops of grain. On this account, they are of great importance in the northern districts, where, unless there be some of this grain, there may, in a very unfavourable season, be no sound grain at all. Scotland, in this respect, is not on an equal footing with England.

The high duties on malt have done ill every where. The revenue is diminished, because the impost is prohibitory. The interests of agriculture suffer by these duties; the Scotish farmer lies under an improper restriction; the poor, who have no milk, are deprived of ale and beer also, and driven to low teas and spirits; and the public are deprived of the use of a grain, which, if reared in full quantity, would prove an excellent preventive of famine.

On these grounds, chiefly, is a reduction necessary in the *taxes on malt* for ale and beer. ALPINUS.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On the extended Circulation of Paper Currency—Reply to Jog-Trot on that Question.

SIR,

WHEN I lately addressed you on the subject of the too extended circulation of paper currency in this kingdom, I was little aware

ware that my short essay would have produced such severe animadversions as those of Mr Jog-Trot, published in your last Number. Averse as I am to enter into a paper war with that gentleman, or any other, upon any topic whatever, yet, lest he should imagine his arguments irresistible and unanswerable, I shall once more take up my pen to refute them; little doubting, but that *vague declamation* and *left-handed argument* will not easily pass upon you, Sir, or a discerning public, for *sound reasoning*.

The letter alluded to appears to be dated from the *Banks of Ayr;* but, from the *style* and tenor, I should shrewdly suspect it had rather *issued* from *Banks in Ayr*. The author is pleased to say, that I was trick'd out in a kind of tinsel court garb; and displays both his wit and learning concerning St *Patrick in a tartan dress*, a *louping on stane*, *Plutus* the god of riches, &c. &c. &c. Pray, Sir, is it of much consequence to you or the public, if a good hint is thrown out, whether it appears in my *tinsel-court dress*, or Mr Jog-Trot's more homely garb of *hodden grey*.

Let me now begin to analyze and discuss his mode of reasoning. In one part of his letter, he says, 'Why is the failure of the Douglas and Heron Company introduced into the argument, unless it be to shew that it militates against my *data*, as I allow 'that their wide extended circulation did some partial service to the commerce and agriculture of the country for the time being?' Wonderful, most wonderful reasoning! Put this partial *advantage* into the scale with the *harm* it did, and see which will preponderate. He also says, the *public* were no losers by that failure; the loss fell solely upon the *proprietors*. When such a sage remark is made, is the author aware, that the *public* is composed of *individuals?* If some hundreds of the most respectable names in this country were subscribers, whose properties were essentially injured, does the public at large not feel the loss? Let me tell that gentleman, had such a salutary law been in being at that time, as the finding of security for two thirds of the circulation, in all human probability this bank would never have been heard of. I will leave the conclusion to be drawn by himself, how far it would have been for the interests of Scotland, if the Douglas and Heron Company had never existed.

In another part of his letter, he says, that notes issued by *private bankers* not being legal tenders of money, it is *ad libitum* of the public to take or refuse them. Granted. But, in answer to this, I shall now put a case.—Supposing this gentleman, or any other, as farmer, pays a rent of 400, 600, or 800l. per annum: he accordingly waits upon his landlord with his half-year's rent of 200, 300, or 400l., in notes, collected from the country round, among whom are several promissory notes of provincial bankers.

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His landlord, however, is unwilling that any of them should be palmed, or rather *Belched* upon him in payment, therefore refuses to take (we shall say) 100l. of such. To this he would probably say, 'Why, they go currently in our markets, nor did I ever see them refused until now.'—'No matter, I your landlord do; you must give me others.'—'Indeed, Sir, I am not provided with others.'—'Well, then, give me your own promissory note on demand for the 100l., bearing interest at 5 per cent. till paid; it will answer my purpose.'

Though there could be no earthly good reason to find fault with a landlord's so doing, yet I much doubt if Mr Jog-Trot would not, in such a case, think himself rather *sharply*, if not *harshly*, dealt with.

It is in order, therefore, if possible, to remedy such disagreeable occurrences as those above stated (which may happen daily to any one), that I wish for the interference of Parliament to stop that *universal credit*, however *specious*, which is not supported by *real capital*; and in doing so, I humbly presume that the fair dealer, who wishes to act on *principle*, and also with *principal*, would find little difficulty in giving security for two thirds of his circulation. In saying this, I have the warrant of one of the most respectable names of the mercantile interest in London, who brought forward such a plan some years ago in the House of Commons.

The world, too, would be apt to think him an *odd* country gentleman, or a still *stranger* Jog-Trot farmer, who would not more willingly risk his property where 14s. in his guinea was secured to him, than otherwise, as at present; for though we have but too many instances of bankruptcy, I cannot say that I have almost ever heard of any who have made a dividend among their creditors to the amount of two thirds of their failure. I trust, Sir, that I have lived too long in the world, and have been too conversant in the business thereof, to cast unworthy reflections upon any class of men whatever. Bankers, as holding the *issues* of commerce, and *sinews* of war, in their hands, are highly useful to the community, of which they are worthy members. When I endeavour, therefore, to draw a line betwixt credit created and erected on a slender *capital*, and that built on a firmer *basis*, I trust the respectable part of that class will have little reason to complain. And so, taking leave of the subject for ever, of the merits of which the public are certainly the best judges,

I am your very humble servant,

A Country Gentleman.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

SIR,

IN the account of the culture of potatoes, published in the 26th Number of your Magazine, I find I have stated, in four different places, viz. p. 146, lines 18th and 26th, and p. 147, lines 12th and 19th, as the 'produce per statute acre,' what ought to have been 'produce from the two acres.' I likewise find, in p. 139, table NO. III., 6s. mentioned, instead of 6d., as the price of a peck of potatoes. Will you rectify these mistakes in a subsequent Number, and oblige, Sir, your obedient servant,

Kilcalmonell, 24. *June* 1806. ALEX. CAMPBELL.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Remarks on part of Mr Campbell's Experimental Essay on the Culture of Potatoes.

SIR,

I HAVE read, with great pleasure, the Reverend Mr Campbell's experimental essay on the Culture of Potatoes; and though, in the country, at a distance from dung and markets, the cultivation of that most valuable root is necessarily limited to the quantity required by the cultivator; even in such situations, it is certainly important to know the best mode of cultivation, which that essay is most exceedingly well calculated to point out. So much the more must his luminous comparative experiments be useful to farmers in the immediate vicinity of populous towns, where the cultivation of potatoes upon an extensive scale must be an object of first-rate attention; and, therefore, any possible inadvertences in his *data*, and consequent results, are of the more importance to be considered, and rectified with precision.

In these remarks, I shall limit myself entirely to that part of his essay which is entitled NO. VII., and to so much only of that table as recapitulates the comparative application of dung in different circumstances. My subject of remark, therefore, is comprised in pages 146 and 147 of your last Number. To have practically analyzed the whole essay, would require a pamphlet; and probably the reverend author, if he chooses to extend his views, and to publish the whole of his experiments didactically, may find some of my observations worthy of being seriously weighed, and be induced to revise the whole of his essay carefully.

I shall divide my remarks into two branches: In the *first*, I shall

shall consider his experiments Nos. 1. 2. 3. as referring to *poor* soil, at a distance from dung and markets; the *second* shall be devoted to his experiments Nos. 4. 5. 6. 7. in reference to *rich* soil, in the vicinity of a large populous town, affording plenty of dung, and furnishing a ready and near market.

§ 1. *Cultivation of Potatoes on Poor Soil, distant from Dung and Markets.*

From the essay and experiments under consideration, independent of all other considerations, it is perfectly obvious that the cultivation of potatoes can never be extensively followed, where no foreign dung is to be had, but from a great distance, and where the market is equally distant with the dung. Either of those two circumstances, separately, will be sufficient to occasion the expence of the crop considerably to exceed the marketable value of the produce: So much more then must both of them contribute to produce certain and large loss to the cultivator in such circumstances.

Thus, in two of the experiments, N0. 2. and 3., p. 146, though dunged almost at the rate of 20 tons to the statute English acre, and though no value is affixed to the dung in deducting the cost from the gross produce, there is an acknowledged loss, per acre, in the ordinary breadth between the rows or drills, N0. 2., of 11s. 0½d.; and, when the rows are at double distance, the loss is admitted to be 19s. 3d. per acre.

The author does not state the nature of the dung used, whether raw or rotten; but assuming its value, including carriage, at 3s. 6d. per ton, about which price I can purchase a small quantity yearly, from a village in my neighbourhood, the loss in these two experiments will be augmented to 4l. 1s., when the drills are at the ordinary distance; and to 4l. 9s. 3d. when the rows are 5 feet asunder.

I must here be excused for saying, that the author has surely got into some obscurity in reporting the results of his experiments, or that I am so stupid as to think so. In Nos. 2. 3. 5. 6. he assumes *two* acres as the quantity calculated upon, yet rates the produce per statute acre as if from *one* only. From the most attentive considerations I can possibly bestow, I am thoroughly convinced *two* acres are uniformly intended to be understood; and, as such, I shall always consider the experiments in these remarks, but in which I have uniformly reduced the calculations to one acre.

In experiment N0. 1. p. 146, where the author calculates a profit 1*l*. 2s. $4\frac{8}{12}$d. per acre, and employs almost 40 tons of dung;

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if the value of the dung be taken into the account, as in the preceding remarks upon experiments Nos. 2. 3., that apparent profit will be changed into a direct and obvious loss of 5l. 17s. $7\frac{4}{7}$d. per statute English acre, at the value or price of potatoes estimated in the essay.

From a full consideration of these circumstances, it seems to me perfectly obvious, that the most adviseable of these three modes of cultivation, for farmers at a distance from dung and markets, or that by which such farmer shall procure the necessary supply of potatoes for his family use, at the smallest real cost, is that described by Mr Campbell in No. 2. p. 146. Because in that way he incurs the smallest loss; or, in other words, procures the quantity of potatoes required at the smallest expence.

In regard to such articles as are of indispensable necessity to a farmer's family, or highly useful to his rural economy, and which cannot be properly procured, otherwise than by means of his own culture, it is quite vague to argue about profit or loss, at certain regulated rates, and in reference to certain customary or average prices at distant markets. The real state of the question, therefore, is, how are potatoes to be raised in the necessary quantity, and at the smallest comparative expence, all circumstances taken into account? One thing I am almost absolutely certain of, that every country farmer, upon turnip soil, and accustomed to the permanent advantages of legitimate turnip husbandry, will grudge, like a miser, every cart-load of dung diverted to the production of potatoes; and, if his soil is any thing tolerably good, will much rather be satisfied with a decent crop of potatoes without dung, than give that best of all possible things in husbandry, to secure a double crop, *i. e.* will rather appropriate two acres of his tolerably good soil, without dung, to raise the necessary crop of potatoes for his farm and family, than raise them upon one acre, by means of the dung that would otherwise certainly serve to produce two acres of good turnips, if not three. Besides, potatoes raised without dung, on good soil, or with a very moderate dressing on poor soil, are much better for the table, than when produced in much greater abundance by a large dose of dung.

Overlooking our author's experiment, No. 3. p. 146, because acknowledgedly not adviseable in practice, and including the value of the dung used in No. 1, 2, we may try the comparative values of these other two methods upon the author's own data, adjusting the results to what may fairly be considered as the cost of the potatoes produced in both. Thus,

No. 1. Rent and culture as in the Essay -	L.	7	0 0
Add 40 tons of dung at 3s. 6d. - -		7	0 0
Cost of 40 bolls, produced at 7s. per boll, is	L.	14	0 0

No.

No. 2. Rent and culture as in the Essay -	L. 7	0	0
Add 20 tons of dung, at 3s. 6d. - -	3	10	0
Cost of 32 bolls produced, at 6s. 6¼d. per boll, is	L. 10	10	0

The difference between the results, in this way of stating the comparison, is certainly not very material, yet is sufficient enough to establish the superiority, in point of economy, of a moderate application of dung in the culture of potatoes, in country situations, over the more liberal, or rather extravagant, application of it, recommended by the apparent results of Mr Campbell's experiments. Were it possible to trace, distinctly, a profit and loss experimental calculation of the after fertility of land, brought into action by the proper application of dung, saved from extraordinary expenditure on potatoe husbandry, and properly applied to the production of turnips, followed in due time by pasture, and its permanently beneficial consequences, I have not the shadow of a doubt, but that every judicious husbandman would agree with me in the general principles I have here endeavoured to elucidate and establish, viz. that the precious benefits of dung ought never, in circumstances such as those which are assumed as the leading features of this branch of the remarks, to be lavished upon the production of potatoes, but should be preserved for those previous crops, according to soil and other circumstances, which lead to rich pasture grass, and consequently, to subsequent fertility for the production of abundant crops of grain.

I must here, however, restrain my pen; for the subject of succession of crops tends to a discussion of too great length, and is not properly warranted by the Essay I have presumed to remark upon. I now proceed to the second branch of my proposed remarks upon the experiments 4. 5. 6. of Mr Campbell's VII. Table, chiefly contained in p. 147. of your Magazine.

§ 2. *Cultivation of Potatoes on Rich Soil, in the Vicinity of Dung and Markets.*

Here we enter upon a new field of inquiry, totally distinct and different from that already discussed. The experiments 4. 5. 6. of the VII. Table, refer to what may be called *town* farms, which are within the reach of procuring extraordinary supplies of purchased dung, and capable of sending potatoe product to market at a reasonable rate.

In the calculations which Mr Campbell has adduced respecting the cost and produce in such situations, he seems to have inadvertently fallen into some very material errors; and as, in these

instances, he has probably gone upon hypothetical views, I shall use the freedom to calculate over again his results upon new *data*, of which, in the first place, I shall endeavour to settle the particulars in the best way I can; not having it in my power, at 50 miles distance from Edinburgh, to ascertain those things with any thing like precision. What I offer, therefore, is only to be considered as an approximation.

1. I shall assume the amount of produce and its value, exactly as stated in the essay under consideration. I believe the Guild peck of Edinburgh has long been regulated at 28 Avoirdupois pounds, instead of 19 pounds Amsterdam weight, as stated by Mr Campbell, which are only 20¾ Avoirdupois pounds; consequently, if I am right, the peck he assumes is only $\frac{3}{4}$ of an Edinburgh peck; and his boll, of course, only $\frac{3}{4}$ of the Edinburgh boll. I am willing, however, to pass over this circumstance; as possibly the price he states, of 6d. the peck, may be proportionally deficient. Yet I have reason to believe, that the wholesale price per boll, which only the farmer can get, without the greatly added expence and risk of being himself the retailer, will be found not to average beyond 6d. the large peck, assumed by me as established in Edinburgh.

2. The *rent*, assumed in the experiments, for rich soil near Edinburgh, of 3l. per acre, is certainly very much below par. The description, indeed, both in regard to quality of soil and situation, admits of considerable latitude: But for rich soils, within such moderate distance from Edinburgh, as shall warrant the enormous expence of carrying to the farm the large quantities of dung necessary for the potatoe husbandry, and the similar cost of carrying to market the vast weight of that crop, I am fully convinced, that *double* the rent, founded upon in those experiments, is not now above the average; and as such, I shall here use the freedom to state the rent in the subsequent new calculations of those experiments.

3. Not to cavil upon minute matters, I shall assume the value or cost of *seed*, in the neighbourhood of Edinburgh, as stated in the experiments: Though at double the Kintire sale price, the price or value of seed ought probably to have likewise been taken in the same proportion.

4. It is impossible, however, to acquiesce in Mr Campbell's estimate of the rate of *culture* being the same in Edinburgh as in Kintire: I must therefore use the freedom to assume that expence as 5l., instead of 3l.: And, on the same grounds, I must augment the charge of *taking up* the crop, from 2l. to 3l. In neither of these do I think I have gone beyond bounds; but, at all events,

events, these two alterations have very little effect upon the comparative results.

5. From the Edinburgh farm, the potatoes must be sent to market at considerable expence, which will vary with the distance; but, as an average, it does not seem unreasonable to allow 1s. per boll.

6. The purchase of dung, and its carriage to the field, is entirely omitted by Mr Campbell in his calculations, though of first rate importance. In the neighbourhood of Edinburgh, I believe, I shall be completely within due bounds in estimating this at 5s. per ton.

Now, upon these *data*, I shall calculate the results of those three experiments, Nos. 4. 5. 6. of Table VII. p. 147. But in 5. & 6. I use the freedom to reduce the calculations to *one* acre in each, for the sake of uniformity, and more obvious comparison; and, being entirely hypothetical, shall throw away fractions as unnecessary.

No. 4. One acre in 2½ feet rows, with 39 tons of dung.

Produce 81 bolls, at 8s.						L. 32	8 0
Deduct—Rent			L. 6	0	0		
Seed			2	0	0		
Culture			5	0	0		
Taking up			3	0	0		
Sending to market			4	1	0		
Dung			9	15	0		
						29	16 0
		Profit per acre				L. 2	12 0

No. 5. One acre in 2½ feet rows, with 19½ tons of dung.

Produce, 64½ bolls at 8s.						L. 25	16 0
Deduct—Rent			L. 6	0	0		
Seed			2	0	0		
Culture			5	0	0		
Taking up			3	0	0		
Sending to market			3	4	6		
Dung			4	17	6		
						24	2 0
		Profit per acre				L. 1	14 0

No. 6. One acre in 5 feet rows, dunged as in the last.

Produce, 45½ bolls at 8s.						L. 18	4 0
Loss per acre						1	9 0
		Carry over				L. 19	13 0

	Brought over		L. 19 13 0
Expence—Rent	L. 6 0 0		
Seed ⅓	1 0 0		
Culture, perhaps leſs, ay	4 0 0		
Taking up ⅓	1 10 0		
Sending to market	2 5 6		
Dung	4 17 6		
			L. 19 13 0

Theſe reſults are by no means preſumed to poſſeſs real accuracy: for attaining which, in a practical point of view, not only are actual experiments neceſſary, but numerous experiments, continued for ſome years. One thing, however, they certainly poſſeſs, a more near approximation to the actual or probable ſtate of profit and loſs, than as calculated upon by Mr Campbell. In the reſults of his comparative ſtatements of theſe experiments, he produces ſuch aſtoniſhing profits, as might induce a potatoe mania, were they relied upon.

His reſults, indeed, with regard to No. 4. and 6, comparatively agree with thoſe here calculated on; as, according to his views, the wide rows give leſs profit upon two acres than the cuſtomary width produces upon one. And we agree likewiſe, in calculating upon a conſiderably higher profit on ſuch ſoils and in ſuch ſituations, by the liberal uſe of dung, than by its ſcanty application to the potatoe crop.

I once propoſed to myſelf to have added, by way of poſtſcript, a compariſon of the culture of potatoes upon moderately good turnip ſoil; diſtant from dung and market; liberally dunged, moderately dunged, and entirely without dung. But as this muſt, for the preſent at leaſt, have been upon altogether gratuitous aſſumption, certainly not warrantable in competition with the experiments of Mr Campbell, it ſeemed moſt adviſeable to deſiſt. Permit me only to ſay that, from twelve years experience of the evil effects of potatoes on a fallow break, more eſpecially as becoming a troubleſome weed in the ſubſequent corn and graſs crops, I now always raiſe potatoes on new taken up lea, thoroughly reduced, and without dung, or with a very moderate allowance of *long* dung; and this piece falls into the regular turnip fallow break in the ſubſequent year. On ſuch occaſions I have ſeen the land, in ſpring, thickly clothed with minute ſeedling plants, from the potatoe apples ploughed in by the winter furrow, and diſperſed by the croſſings and harrowings. I am your and Mr Campbell's moſt obedient ſervant,

Berwickſhire, June, 1806. *R. r.*

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Upon the Expediency of Aſſeſſments for the Poor of Scotland, and the Impolicy of all direct Taxation upon the Lower Claſſes of the People.

SIR,

IN reſuming my pen, as a humble contributor to your valuable Magazine, I feel a partiality for the ſubſcription I adopted, when communicating my ſentiments upon the poor-laws of Scotland, in your fifth volume; and a ſecond uſe of the ſubſcription induces me to ſay a few words more upon the former ſubject.

The handſome reply which was afterwards made, confirmed my reſpectful opinion of the intelligent author, who, upon that occaſion, condeſcended to adopt me his ſon.

Had I an opportunity, or were I permitted, I would fall upon the neck of my venerable father, and endeavour to convince him that I am capable of entertaining an affection nothing ſhort of filial, for any diſcerning individual, whoſe ſentiments and conduct are uniformly humane and virtuous.

Differences of opinion, however, will take place, even amongſt men who are influenced by the moſt laudable deſigns; and theſe differences will not be terminated by the uſe of ſpeculative arguments, but can only be reconciled by practical demonſtration and experience.

The ſubject upon which my venerable father and I diſagree, it will be recollected, was regarding aſſeſſments for the poor, which I maintained ſhould at leaſt be occaſionally reſorted to, with prudent limitations, as the only fair and effectual means of ſupporting our infirm and indigent fellow creatures. This my father refuſed to admit, and argued with all the apparent jealouſy of a landholder, that, to introduce aſſeſſments, would be tantamount to the introduction of the poor's rates of England. His reply, however, tended conſiderably to qualify the aſſertions or opinions which his original communication contained, and which had occaſioned my ſubſequent remarks; ſo that the real difference in our opinions was reduced to ſomething reſembling a ſhade. That ſhade I apprehend will remain; for though our arguments may not be ſucceſsful in convincing others, it does not follow that we ſhould relinquiſh our own conviction. Permit me to add, that there is one eſſential diſtinction betwixt the poor-laws of England and Scotland; and this is, that the officer, who is called the overſeer of the poor, only requires the ſanction of a ſingle magiſtrate, when placing an applicant upon the pariſh rates in England; whereas, in Scotland, no ſuch arbitrary and ill-judged authority exiſts; but the very

perſons who are chiefly liable to pay the aſſeſſments, are conſtituted judges and managers thereof. This being the caſe, there can be very little danger of abuſive and oppreſſive aſſeſſments in Scotland. I therefore repeat, with all due deference to your old and reſpectable correſpondent Agricola, that I ſee no other way of obtaining juſtice and equity, than by compelling the ſelfiſh and ungenerous to contribute a proportion, according to the laws of nature and religion, along with the humane and benevolent, who, upon many occaſions, voluntarily ſubmit to more than an equal ſhare of the burden.

I have learnt alſo that aſſeſſments are common in ſeveral counties in Scotland, without having produced thoſe ſerious evils ſo much apprehended by Agricola.

I am now fully diſpoſed to drop this amicable controverſy, which is here only renewed by accident. I was much pleaſed to ſee that Agricola readily entered into my ideas upon the ſuggeſtion of parochial friendly ſocieties. If no further progreſs has yet been made in theſe deſireable inſtitutions, it is hoped the cauſes of delay will ſhortly be removed; and this ſalutary expedient for the ſupport of the poor excite the intereſt and attention of every well-wiſher to his country.

I come now to a different ſubject; a ſubject which you very properly take notice of at the cloſe of your leading article of intelligence in laſt Number, where you requeſt your reporters to furniſh information, in ſo far as regards their reſpective counties.

You mention that a reſpectable correſpondent in Berwickſhire deſires you to ſtate, that the cottagers in that county had been aſſeſſed for theſe two years paſt in 4s. of window-tax, and alſo made liable to the dog-tax, while theſe taxes (ſo far as he can learn) have not been levied in the conterminous counties, or even in the metropolitan county, Mid-Lothian.

It is added, that this tax has not been levied in the county with which you are connected, and ſeem to think it probable, that it has originated in a miſtake of the Berwickſhire ſurveyor, he not having rightly comprehended the directions from the Tax-office. I am ſorry to mention, that this obnoxious tax has been levied in counties very diſtant from Berwickſhire. I am aſſured it has been levied in Ayrſhire and Dumfrieſſhire. I preſume it has been alſo exacted in the ſtewartry of Kirkcudbright, though, upon this, my information is not yet poſitive. In the county from which I write, it has been levied from thoſe willing to ſubmit; and it is to be apprehended forcible meaſures will be reſorted to againſt ſuch as have not yet paid; and I believe it may be attributed to the humane indulgence of the gentleman who acts as collector, that ſuch meaſures have not yet been uſed.

I ſhall ſay nothing upon the ſuppoſed inconſiſtency of aſſeſſing one county, and exempting others; nor ſhall I conſider, that the Berwickſhire ſurveyor has been miſtaken; for I preſume if one county is liable, all are ſo; and we ſee that other ſurveyors have acted in the ſame way as the ſurveyor of Berwickſhire. But it is the tax itſelf of which I mean to diſapprove as impolitic, vexatious, and unproductive.

As far as my information goes, the act of Parliament impoſing this tax is general for South and North Britain, and enacts, that a tax of 4s. be levied yearly from the occupiers of all houſes not paying according to the table of window-lights, provided the occupiers are not in the character of paupers, or receiving relief from their reſpective pariſhes. In England, the impolicy and oppreſſion of this tax may not be ſo generally felt, as a conſiderable proportion of the lower ranks in that country are occaſionally obtaining relief from their pariſhes; but in Scotland we all know, and my father Agricola and I agree upon that point, the proportion of houſeholders receiving relief from their pariſhes, is comparatively very ſmall. By the ſtrict interpretation of the act, this ſmall proportion only is exempted, and all others muſt be liable. I am further told, that the Barons of Exchequer for ſome time diſpenſed with the collection of this tax in Scotland; but that the year before laſt they had declined diſpenſing with it any longer, and ſignified their pleaſure that it ſhould be levied. My information may not be exactly correct; and theſe circumſtances will be better known and underſtood by many of your readers; but as I feel intereſted in the ſubject, I am induced to communicate my ſentiments, in hopes of provoking diſcuſſion, and bringing forward additional information, whilſt, at ſame time, I gratify my own feelings, by expreſſing my earneſt diſlike to a tax reſembling what I have heard of the deteſted hearth-money of Ireland, or the capitation taxes of more arbitrary governments.

To taxes we muſt all patiently ſubmit, and ſacrifice a part for the preſervation of the whole; but every direct tax upon the lower claſſes of the people ought to be avoided. Taxes upon articles of conſumption are much leſs objectionable, becauſe they are in ſome meaſure optional to the conſumer; and a little time and habit often renders them as productive as if they were direct. This remark, though apparently ſimple, is by no means my own, but has been made by ſuperior obſervers. However, it will now only apply to the lower claſſes in this country, and to them it will apply always.

Thoſe who have property to protect and defend, and ſuch as can afford to indulge in the conveniences and luxuries of life, are generally ſenſible that they ought and muſt contribute to the ſup-

port and neceſſities of the ſtate, both directly and indirectly. But there is ſomething extremely tyrannical and vexatious in exacting a direct tax from the man who depends alone for ſubſiſtence upon the earnings of his daily labour, and theſe earnings perhaps barely ſufficient to procure for him and his family the common neceſſaries of life. Granting that the great riſe which has taken place in all kinds of wages, ſhould ſtill enable him to pay the tax, and live better than formerly when no tax was exacted; yet his mind becomes diſaffected, and he feels diſcontent at a government, the laws of which, he apprehends, are haraſſing and oppreſſive. If, in time, he acquires capital, he becomes a ſubject for taxation, both direct and indirect; and as he then looks to the ſtate for protection, and feels he has ſomething at ſtake, ſo, he is willing to contribute his proportion along with other good citizens; but, until then, let no direct tax be charged upon him, but treat him with kindneſs and forbearance, as a member of ſociety whoſe willing ſervices we are ready to reward, without demanding any direct deduction from the fruits of his uſeful induſtry. Conduct ſuch as this would render the ſtate ſecure of the attachment of the moſt numerous claſs of the people; an object of all others the moſt important to the ſafety and proſperity of the empire.

Direct taxes, then, upon the lower orders of the community, are evidently impolitic and vexatious; and as they can only be ſmall, they are of courſe unproductive.

A very trifling addition to ſome of the more productive taxes, by which ſuch immenſe ſums are already paid in to the treaſury, would ſcarcely be felt by the country, whilſt this ill judged tax upon cottagers would be thereby done away, to the ſatisfaction of every reaſonable mind.

I ſpeak with the more confidence, that I have had frequent opportunities of obſerving and ſtudying the affections and propenſities of the lower orders of the people. Honeſt and humane treatment conſtantly obtains their approbation and attachment, whilſt the very ſuſpicion of injuſtice or oppreſſion rouſes their indignation, and provokes their jealouſy.

I am at a loſs to know whether your Berwickſhire correſpondent takes in hinds, or yearly workers, under the general deſcription of cottagers; but in this county, ſeveral of the former have been charged. This appears to be a very rigid interpretation of the act; for a farmer's ſervant certainly belongs to his employer's family, by whom he is fed and paid, and only lives in a cottage becauſe there is not room for him under the farmer's roof. If the tax continues, it muſt fall upon the farmer; for this the ſervant will quickly take care of, at making his bargain. This

will

will be a freſh burden upon agriculture, which already contributes perhaps more than a fair proportion. In this view, indeed, it muſt be conſidered as a new impoſt upon the landed intereſt; for, though it may not be perceived at firſt ſight, every ſpecies of taxation which affects agriculture, muſt ultimately fall upon landlords, and diminiſh the value of their property.

However, if the collection of it cannot be longer diſpenſed with, we ſhall hope ſoon to hear of the repeal of the act by which it is impoſed; and I preſume a proper repreſentation of the evil is all that is wanted to obtain redreſs.

It appears that every one who pays this tax, and keeps a dog, is liable for the dog-tax alſo. Upon this I ſhall not ſay much, being ſenſible that many *uſeleſs dogs* are kept, and are dangerous nuiſances in the country. Beſides, as this latter tax is in ſome meaſure optional to moſt cottagers, it can be conſidered the leſs oppreſſive; but ſo much I am an enemy to all direct taxation upon the lower claſſes, that I conſtantly diſlike the exaction of road-money, or converſion-money for ſtatute labour, from any but perſons of ſubſtance, and occupiers of lands. What though the ſcarcity of money, the neceſſities of the country, or an attachment to ancient habits, formerly compelled us to call upon all ranks to aſſiſt with ſuch public works, are we not at liberty, in the courſe of improvement, to diſregard all ſelfiſh and illiberal arguments for commutations, and lay wholly aſide what is inconvenient and irkſome, adopting boldly thoſe alterations which we eſteem moſt conducive to public proſperity and internal peace?

Our landlords require ſome powerful ſtimulus to awaken their attention, and to excite amongſt them the ſame alacrity which on every occaſion characterizes our merchants and manufacturers. This you noticed, in pointed terms, in your leading article of intelligence in laſt Number, as well as on former occaſions, in treating on the new property-tax. Landlords, however, ſeem to conſole themſelves, that if their own remiſſneſs ſubjects their property to more than its own ſhare of taxation, they obtain ample amends in the great advance of rents which has been hitherto going on; and whilſt taxes are accumulating upon them on the one hand, they are abundantly ſolicitous, and perhaps but too ſucceſsful, in procuring the increaſed means of diſcharging them, and of living in ſplendour and luxury, or hoarding up wealth which they are never to enjoy.

With ſentiments of duty and reſpect for my father Agricola, and my warmeſt approbation of the impartiality and ability diſplayed by the Conductor of the Farmer's Magazine.

I remain yours, &c.

Wigtonſhire, June 1806. AGRICOLA, Junior.

ACCOUNT OF HOLKHAM SHEEP-SHEARING.

O fortunatos nimium, ſua ſi bona norint,
Agricolas! VIRG.

O! happy, if he knew his happy ſtate,
The man who, free from bus'neſs and debate,
Receives his eaſy food from Nature's hand,
And juſt returns of cultivated land.—DRYDEN.

THE annual meeting and feſtival, eſtabliſhed by THOMAS WILLIAM COKE Eſq. for the encouragement of Agriculture, (the firſt of ſciences and ſource of commerce), and for promoting more particularly the improvement of Live Stock in this county, commenced on Monday, 23d June.

HOLKHAM, the celebrated and 'lov'd abode' of this moſt worthy man, has this week been the happy reſort of the moſt diſtinguiſhed patrons and amateurs of Georgic employments, and of many eminent profeſſors of huſbandry and grazing in general.

Before we enter into a deſcription of the buſineſs and enjoyments of the meeting, we ſhall here mention, that the following noblemen and gentlemen were amongſt the number of thoſe who attended the ſheep-ſhew.

Earl Thanet, Earl Winchelſea, Earl Talbot, Lord Viſcount Anſon, Lord Somerville, Lord William Ruſſel, the Honourable Colonel Fitzroy, Sir J. H. Aſtley, Sir John Sinclair, (Preſident of the Board of Agriculture), Sir Watkyns Williams Wynne, Sir Robert Harland, Sir John Wrotteſley, Admiral Bentinck, Colonel Iſted, Colonel Montgomerie, Lieutenant-Colonel Gordon, Colonel Beaumont, M. P. for Northumberland, Mr Francis M. P., Mr Bernard Howard, Mr Lambert, Mr Maſters, Mr Swiſtunoff, chamberlain to the Emperor of Ruſſia, Mr Tollett of Staffordſhire, Mr Elman of Glynd in Suſſex, Mr Buckley of Leiceſterſhire, Mr Lloyd from Wales, Mr Malcolm of Warwickſhire, Mr Moſeley, Mr Bevan, Mr R. P. Jodrell, Mr G. Wyndham, Mr Pratt, Mr W. Hoſte, Mr Plumptre, Mr Crowe, Mr Riſhton, Mr Rolfe, Mr Bell, Captain Becher, Mr Poſtle, Mr Palgrave, Mr John Gurney, Mr Hampp, Mr W. Foſter junior, Mr Houſſman, Mr J. Herring, Mr J. Herring junior, Reverend St John Prieſt, Reverend Mr Munnings, Mr Money Hill, &c. &c. &c.

FIRST DAY—*Monday, June* 23.

The company began to aſſemble at the Hall about ten o'clock, and were introduced to Mr COKE, who, attended by his numerous viſitors, ſoon after proceeded on horſeback to Mr Wright's farm at Longlands in the Park, where ſeveral implements of huſbandry were exhibited. Meſſrs Cordwell and Brewſter's machine for dreſſing corn was very much approved of, and conſidered a mechanical improvement of real utility. Mr Sheppard of Chippenham exhibited a cultivator, Mr Balls an irrigator, and Meſſrs Mather & Browne a chaff-cutting machine.—A dibbling machine from London was condemned as imperfect.

Mr Money Hill of Waterden, Mr Reeve of Wighton, Mr George of Dunſtan, Mr Purdy of Egmere, Mr Davis of Burnham, and Mr H. Blyth of Burnham, ſhewed ſome capital Southdown ſhearling wethers

in

in their wool, for the prizes. Mr Oakes of Burnham alſo ſhewed a Southdown wether; but being a two-ſhear, was too old by a year to obtain the prize. Mr Reeve ſhewed two fine Leiceſter ſhearling rams in their wool, and ſeveral pens of Southdown theaves (ewe hoggetts). Mr Johnſon of Kempſton ſhewed a pen of Leiceſter theaves, and Mr Moſeley a Suffolk boar, for the prizes.

There was alſo a ſhew of Mr Coke's Leiceſter rams, two Spaniſh rams, &c. &c.

After viewing this excellent ſtock, the gentlemen returned to the hall about four o'clock, where Mr Coke, in the moſt ſplendid and hoſpitable manner, entertained 170 noblemen, gentlemen, and yeomen.

After dinner, Mr Coke gave the following toaſts:—Conſtitution and King.—The Plough and the Fleece.—Small in ſize and great in value.—Sir John Sinclair, Preſident of the Board of Agriculture, and ſucceſs to the Inſtitution.—Breeding in *all* its branches!

The health of Mr Coke was drank with three times three.

About ſix, Mr Coke and his gueſts roſe from table; and in the evening there was a ſale of his fine Leiceſter rams, which obtained the following prices.

SHEARLING LEICESTERS.

	Weight of Fleece.	*Price.*		*Weight of Fleece.*	*Price.*
No. 1.	9 libs. 8 oz.	L.5 5 0	No. 4.	9 libs. 0 oz.	L.14 14 0
2.	9 libs. 0 oz.	7 17 6	5.	8 libs. 14 oz.	21 0 0
3.	10 libs. 3 oz.	23 2 0			

TWO SHEAR, Do.

No. 6.	6 libs. 1 oz.	L.7 7 0	No. 3.	6 libs. 5 oz.	L.65 2 0
9.	6 libs. 11 oz.	17 17 0	4.	7 libs. 8 oz.	26 5 0
8.	5 libs. 12 oz.	8 8 0	5.	9 libs. 2 oz.	43 10 0

AGED, Do.

No. 1.	4 libs. 0 oz.	L.11 11 0	No. 7.	5 libs. 11 oz.	L.10 10 0
2.	6 libs. 0 oz.	8 8 0			

Total, 270l. 7s. 6d.——Average, 19l. 6s. 3d.

TUESDAY, *June* 24.

And now, of ſnowy white, the gather'd flocks
Are in the wattled pens innumerous preſs'd,
Head above head: and, ranged in luſty rows
The ſhepherds ſit, and whet the ſounding ſhears. THOMSON.

The ſecond day's buſineſs commenced with the ſale of Leiceſter theaves and ewes, which went off at the following prices.

LEICESTER THEAVES—One ſhear.

Lot 1. of five	- L.	16 16 0	Lot 5. of three	- L.	29 8 0
2. of do.	- -	18 18 0	6. of do.	-	36 15 0
3. of do.	- -	22 1 0	7. of do.	-	37 16 0
4. of three	-	39 18 0	8. of five	-	22 1 0

Lord Thanet was the principal purchaſer.

EWES—Two ſhear.

Lot 1. of five	- L.	35 14 0	Lot 3. of ſix	- L.	28 7 0
2. of do.	-	38 17 0			

AGED.

AGED.

Lot 4. of five	L. 50	8	0	Lot 8. of five	L. 26	5	0
5. of do.	53	11	0	9. of do.	34	13	0
6. of do.	37	16	0	10. of twelve	50	9	0
7. of do.	42	0	0				

Lord Thanet, and Mr Buckley of Leiceſter, purchaſed moſt of the above.

Immediately after the ſale, Mr Coke and the gentlemen preſent mounted their horſes, and proceeded through luxuriant fields of ſainfoin, to view his half-bred Marino lambs, (a croſs of the Spaniſh and Southdown), and alſo the drilling of turnip ſeed, and other operations of huſbandry; and from thence to Mr Wright's barn, where the men were clipping, 'with well guided ſhears,' Mr Coke's extraordinary fine flock of Southdowns; here, alſo, were to be ſeen the implements of huſbandry, the pens of prize ſheep, &c. and Mr Purdy's remarkably fine ſteers and heifers, of the Devonſhire breed. After a due examination of the ſtock, fleeces, &c. and alſo the premiſes and agricultural arrangements, which are all on the moſt convenient and extenſive ſcale; the viſitors returned to the manſion-houſe, where they were entertained in the ſame ſumptuous ſtyle as on the preceding day, to the number of two hundred and ſeventy.

After the uſual toaſts, the health of Mr Coke was drank with three times three; which toaſt was re-echoed by the different parties in the ſtatue-gallery, the ſaloon, and the dining rooms, all which were completely filled with his delighted gueſts.

Mr Coke then called upon Mr John Herring, jun. who produced three ſhawls, manufactured by Meſſ. John Herring & Sons of Norwich, *entirely* of Mr Coke's beautiful Southdown fleece, which obtained ſuch general admiration, as to induce the company preſent to order many of the ſame fabric.

Mr John Herring, jun. introduced theſe ſhawls, by obſerving, that having received a Southdown fleece from Mr Coke, weighing 4 lbs. and of an exquiſite texture, it was found ſo applicable to the produce of yarn, that he was enabled to fabricate the ſhawls he had then the pleaſure of ſubmitting to the approbation of the company, and that they not only did honour to the worthy donor of the feaſt, but likewiſe exhibited another proof (amongſt very many) of his laudable endeavours to benefit the country. Mr Herring ſaid he could not conclude without offering alſo three other ſpecimens, produced from Mr Tollett's Spaniſh ſhearling. Although in the trial this wool was not found ſo applicable to the manufactures of Norwich as Mr Coke's, yet that great credit was due to Mr Tollett, for the unwearied attention he had given to the growth of that wool, which was adapted, in every reſpect, to the clothing counties.

Mr Coke then roſe, and expreſſed his thanks to Mr J. Herring, for his extreme attention to, and able explanation of, the ſubject, and begged to propoſe his health, with proſperity to the Manufactory of Norwich; which was drank with three times three.

Mr

Mr Tollett ſaid he had tried all kinds of wool, and had proved that we can grow in this country, wool equal, if not ſuperior, to the fineſt Spaniſh. The ſhawls made of Mr Coke's Southdown wool did infinite credit to the manufacturers to whom he had recommended the experiment, which had exceeded his expectations. Indeed, theſe ſhawls were ſo light and elegant, that he ſincerely hoped our fair countrywomen would prefer ſuch dreſſes for the winter, and no longer expoſe themſelves in muſlins to thoſe accidents from a devouring element, which had proved ſo fatal to many of them. If this ſuperior manufacture was extended, Norwich would derive both honour and riches from Mr Coke's improvements; for, after the faireſt trial, his Southdown was found to be more applicable to the ſhawl manufactory than the fineſt Spaniſh wool, or any mixture of it; and he felt more gratification from the ſucceſs of this experiment, than if it had ariſen from any wool which he (Mr Tollett) had brought here himſelf.

This generous ſentiment was warmly applauded, and Mr Tollett's health, with thanks to him for his liberality and attention to the intereſts of Norfolk and Norwich, was drank with three times three.

[Mr Tollett has ſold all his Marino wool at 4s. 6d. per lib., and his fleeces averaged 19s. 6d.]

Mr Coke ſaid, he thought it neceſſary to explain the reaſon why he parted from his Leiceſter ſheep, after having introduced them into this country. Many years ago, finding his Norfolk ſheep a vile degenerate breed, he hired a Leiceſter tup of the late Mr Bakewell, to improve them; and he adviſed his tenants and the county to do the ſame. About fifteen years ago, Mr Elman, in a tour, viſited Holkham, and he was happy to ſhew him and all other ſtrangers every attention it was in his power to beſtow. Mr Elman recommended him to introduce the Southdowns, and he accordingly purchaſed 500, which he ſold in the county; and he had eſtabliſhed the breed againſt every prejudice. After a fair trial of thirteen years, he found the Southdowns more profitable than the Leiceſter; and as farmers ſhould always look to that which would pay them beſt, he naturally preferred the Southdowns to the Leiceſters, though he ſtill continued to think very highly of the latter in many reſpects, and conſidered the country much indebted to Mr Bakewell for his attention to the improvement of ſtock, and for whoſe memory no one had a higher reſpect than himſelf. Mr Coke then obſerved, that though he had ſucceeded ſo well with his Southdowns, yet he thought that a croſs of the Spaniſh and Southdown might ſtill prove more profitable; and as Lord Somerville and Mr Tollett had found them to anſwer, he was reſolved to give them a fair trial, for the benefit of the country at large.

Tueſday Evening.

SALE OF SOUTHDOWN THEAVES.

	L.	s.	d.		L.	s.	d.
Lot 1. of ten -	42	0	0	Lot 5. of ten -	57	15	0
2. of do. -	52	10	0	6. of do. -	49	7	0
3. of do. -	41	0	0	7. of do. -	55	13	6
4. of do. -	54	12	0	8. of five -	36	15	0

Two-

Two-ſhear Ewes.

Lot 9. of five L. 32 11 0 | Lot 10. of five L. 31 10 0

A three-year old Southdown ewe, 8l. 8s.

Sir W. W. Wynne, Sir R. Harland, and Mr M. Hill, were the principal purchaſers.

The buſineſs of this day concluded with the LETTING of SOUTHDOWN TUPS.

Aged.

No.		No.	
11.	Fifteen guineas, hired by Mr Crowe	3.	Forty guineas, hired by Mr Howard
18.	Forty do. hired by Lord Anſon	9.	Thirty-five do. ———
7.	Thirty do. hired by Sir R. Harland	16.	Thirty do. hired by Mr Lloyd
13.	Forty do. hired by Mr Reeve	15.	Thirty do. hired by Lord Talbot

Two-year old.

No.		No.	
17.	Thirty-five guineas, hired by Sir R. Harland	12.	Thirty guineas, hired by Mr Talbot
8.	Thirty do. hired by Mr Dewing	19.	Thirty do. ———
1.	Forty do. hired by Mr Howard	14.	Forty do. hired by Mr Seppings

There were competitors for almoſt every tup, which were drawn for at the above fixed prices.

THIRD DAY.—*Wedneſday, June* 25.

The exhibition of the ſlaughtered carcaſes of the ſheep for Prizes, took place this morning: and the following is an account of their weights, &c.

Mr COKE's Southdown Ewes.

No. 1.	ſt.	lib.	No. 1.	ſt.	lib.	No. 2.	ſt.	lib.	No. 2.	ſt.	lib.
Tallow	1	2	Entrails	0	11½	Tallow	1	2½	Entrails	0	13
Skin	0	9	Carcaſe	8	6½	Skin	0	11	Carcaſe	7	13½
Pluck	0	10				Pluck	0	11½			

Mr Bell, of Wallington, having named the exact weight, won the ſweepſtakes.

Mr PURDY's Southdown Wether.			Mr DAVIS's Southdown Wether.			Mr BLYTH's Southdown Wether.		
Tallow	1	2½	Tallow	1	1½	Tallow	1	2½
Skin	0	9½	Skin	0	9	Skin	0	9
Pluck	0	13	Pluck	0	11	Pluck	0	10
Entrails	1	1	Entrails	0	12	Entrails	0	12
Carcaſe	8	2	Carcaſe	7	11	Carcaſe	8	0
Live weight	12	5	Live weight	11	7	Live weight	11	10
Mr GEORGE's Southdown Wether.			Mr PURDY's Leiceſter Wether.			Mr REEVE's Leiceſter Wether.		
Tallow	1	2½	Tallow	1	1	Tallow	0	12½
Skin	0	7½	Skin	0	11	Skin	0	10½
Pluck	0	11½	Pluck	0	12½	Pluck	0	9½
Entrails	0	12½	Entrails	1	3	Entrails	1	0½
Carcaſe	7	5½	Carcaſe	11	9	Carcaſe		

The reſt of this morning (Wedneſday) was dedicated to the trial of ſome newly conſtructed ploughs and implements. Mr Parkinſon's Spring or Rotheram plough was tried, under the immediate ſuperintendance of Sir John Sinclair; but owing to ſome accident or other, it did not appear to anſwer the purpoſe.—The Rev. Mr Barker of Swannington produced a moſt beautiful inſtrument, called a *Dinanometer* (an improvement

improvement on M. Regnier's invention), for aſcertaining the draught of, and the power required to work, any machine or agricultural implement.—Mr Walker of Norwich, who conſtructed this inſtrument under the direction of Mr Barker, received orders to make ſeveral of them at 2 guineas each.—Mr Fuller of Wiſbeach exhibited, for inſpection only, a machine worked by two horſes, called an Extirpator of Weeds.—Mr D. Thurſton of Burnham ſold ſeveral of his improved machines for dreſſing meal into flour, from 8 to 18 guineas each.—Mr Malcolm, author of an excellent work, called the Compendium of Agriculture, exhibited a piece of marine ſoap, which will waſh with ſalt water; and from the great orders for which, from the Eaſt India Company, and other ſervices, it is ſaid that the manufactory of it will produce to the Earl of Warwick a profit of 10,000l. a year.—Mr Leo's Garget Liniment for cows was much approved of, and it was propoſed to give him the thanks of the Agricultural Society for his communication.

About the ſame number of gentlemen dined at the Hall as on the firſt day.—After the uſual toaſts, and the health of the Lord Lieutenant of Ireland had been given, Mr Coke proceeded to preſent the elegant Prize Cups, which had been adjudged to the ſucceſsful candidates in the following order.

To Mr Reeve of Wighton, for his Shearling Leiceſter fat wether; and for his Leiceſter ſhearling ram, two Silver Cups, value ten guineas each. When Mr Reeve took them in his hands, Mr Coke expreſſed the pleaſure he experienced in preſenting them to one who ſo well deſerved them, and added, with great good humour, that he was happy in thus ſending him away *in his Cups!*

To Mr H. Blyth of Burnham, for the beſt Southdown ſhearling fat wether, a ſilver cup value ten guineas.

To Mr Johnſon of Kempſton, for the beſt pen of ten Leiceſter Theaves, a ſilver cup value ten guineas.

To Mr Purdy of Egmere, for four pens of Southdown Theaves, a ſilver cup value ten guineas.

To Mr Money Hill, for the beſt Southdown ſhearling ram, a ſilver cup value ten guineas.

To John Moſeley Eſq. of Toſts, a ſilver cup value five guineas, for his Suffolk boar.

In preſenting the ſilver cup, value ten guineas, to Mr Beck of Weſt Lexham, for irrigating 35 acres of meadow, which this year produced 70 tons of hay, where only ruſhes grew before, Mr Coke ſaid, that no county was more capable of this kind of improvement than Norfolk, and he hoped that landlords in general would give every encouragement to their tenants in this particular, which would ultimately render this county a perfect garden.—Mr Beck had been the firſt to try the experiment, (under the direction of that able Engineer and Mineralogiſt, Mr Wm. Smith), at an expence of more than 900l.; but he had found ſo much advantage to ariſe from it, that he had taken the whole expence upon himſelf, but which Mr Coke offered to defray, on certain conditions.—Mr Coke ſaid, he never preſented a Prize Cup with ſo much ſatisfaction; for never was a premium ſo well deſerved. Mr Coke then gave as toaſts—Irrigation—and, an Incloſure of *all* Waſtes!

Mr

Mr Coke next introduced and recommended Mr Smith (who has lately publiſhed ſome Obſervations on Irrigation, and is about to publiſh a grand work on the Strata of England and Wales) to the notice and patronage of the county. Mr Smith has lately preſerved upwards of 45,000 acres in this county from the inroads of the ſea.

With reſpect to the premiums for encouraging improvements in agricultural implements, there were none this year that could claim the prize.—Cordwell and Brewſter's winnowing machines were well conſtructed, and ſome of the other implements had alſo their reſpective merits.—Too much praiſe could not be given to the Rev. Mr Barker for his ſucceſsful exertions of extraordinary mechanical abilities, in the production of an inſtrument which Mr Coke ſaid, he conſidered ſo excellent and applicable to agricultural implements, that he preſented Mr Barker with a moſt elegant ſilver cup, with its cover. Mr Coke then gave—The ſucceſsful candidates.

Theſe were all the prizes for this year; thoſe for the next would be ſettled at the next meeting of the Agricultural Society; to which time the adjudication of ſundry premiums to ſhepherds was deferred.

After the health of Mr Coke had been drank with reiterated applauſes, the Rev. St John Prieſt roſe, and holding in his hand the gold medal preſented by the Board of Agriculture to Mr Coke in March laſt, in a well delivered addreſs, congratulated that gentleman on his acquiſition of this premium, for his ſpirited example and exertions in irrigation at Weſt Lexham, thereby increaſing the paſture of a county, where that important operation could be carried on with ſo much effect; he alſo congratulated the county on this occaſion, at a time when their worthy repreſentative had refuſed more precious and ſplendid rewards, becauſe incongruous to his internal feelings; and he felt the higheſt ſatisfaction in having been appointed by the Norfolk Agricultural Society to communicate theſe ſentiments to their highly reſpected Preſident.

Mr Coke ſaid, that no one could feel this compliment more than he did himſelf; for no ſituation was more deſireable to him than that of being the repreſentative of this county, whoſe intereſts he had ever endeavoured to promote. He had oppoſed the generally reprobated tax on private brewing, although brought forward by his friends.—It had been for the preſent abandoned; and whenever it ſhould be brought forward again, he ſhould give it his moſt ſtrenuous oppoſition. He had ever acted independently—he had never diſguiſed his opinions; and he would now ſay, that if any man could ſave this country from the dangers which threatened it, and was entitled to their confidence, it was Mr Fox, whom they would find the ſame conſiſtent man, and ſteady friend to the true intereſts of the people whether in or out of power.—Mr Coke concluded by ſaying, that he ſhould be happy to ſee his friends with increaſed numbers on this and every other occaſion.

The buſineſs finally terminated with the ſale of Mr Coke's Devon cows and bulls, and the company departed highly gratified with the objects which this magnificent houſe, extenſive park, and beautiful plantations had preſented, as well as with the liberality and attention of its illuſtrious poſſeſſor.

BRANOH

BRANCH II.

Review of Agricultural Publications.

General View of the Agriculture of Eaſt-Lothian. Drawn up for the Conſideration of the Board of Agriculture, from the Papers of the late Robert Somerville, *Eſquire, Surgeon in Haddington.* 1805. *Sold by* Nicol, *&c. London;* Creech, *Edinburgh;* Archer, *Dublin. pp.* 326.

The original Survey of Eaſt-Lothian, printed in 1794, though viewed, by many people, as preſenting but an imperfect account of the huſbandry of that diſtrict, was, by others, conſidered as a good quarry whence valuable materials might be digged, which, after being hammered, and poliſhed, and arranged, might be uſed with advantage on a future occaſion. Such were our ideas when the original work appeared; therefore we are glad to ſee them realized. Much new matter, however, is incorporated with the old ſtores; and, on the whole, a ſatisfactory deſcription of this pattern county is now ſubmitted to the conſideration of the public.

Though it is ſtated, in the title-page, to be compiled from the papers of the late ingenious Mr Somerville, we underſtand that a large part of the work proceeded from a different ſource. It is needleſs to mince matters. Mr Somerville was, in 1800, employed by the Board, to prepare a general view of Eaſt-Lothian huſbandry for their inſpection, and executed the greateſt part of the firſt ſeven chapters. After his deceaſe, the labouring oar was undertaken by a diſſenting clergyman in the county, of conſiderable abilities, by whom, with the aſſiſtance of ſome friends, it was finiſhed. Different opinions on theoretical points may be entertained from thoſe profeſſed by the author; but we are inclined to believe, that few of his facts will be diſputed or controverted.

The firſt chapter details the geographical ſtate and circumſtances of the diſtrict. Eaſt-Lothian is one of the three counties comprehended under the common name of the Lothians. It is bounded by the German Ocean on the eaſt, by the Frith of Forth on the north, and by Berwickſhire and Mid-Lothian on the ſouth and weſt. Altogether, it contains about 190,000 ſtatute Engliſh acres, whereof 64 parts are arable, 20 parts hills or waſtes, and 16 parts meadow and low lying land, moſt of which may, with more accuracy, be characterized as links upon the ſea ſhore, and moors ſcattered through the arable diſtrict. The climate is va-

riable, and reasons are assigned for this variety. The soil is, in most places, well adapted to the growth of grain and vegetables, though, from the dryness of climate, both grass and turnips are precarious crops. The surface is very uneven, rising in some places, even upon the coast, to a considerable height. Viewed from the most elevated part of the Lammermuir district, a rich and beautiful scenery is presented. From the top of Garleton hills, in the centre of the county, a view equally delightful may be gained. In the author's words,

'It is scarcely possible to conceive a richer or more pleasing picture than the county exhibits, viewed from this point, about an hour before sunset, in a fine harvest evening. The fields all round being covered with rich crops, the greatest part in sheaves, convey an idea of the most unbounded plenty; while the variegated appearance, so common at that season, upon the foliage of the trees and hedges, a part of which are then in a state of decay, joined to the lengthened shadow which distinctly marks every enclosure and subdivision, and indeed almost every solitary tree, exhibits every beauty that can be expected from the united effects of natural advantages, highly improved by human industry.

'The smoke rising from the great towns and villages, and from every cottage, is distinctly seen; and, by marking the abodes of every ploughman and cottager, gives the mind a warm interest in the evening scenes of that part of the community, who are destined by Providence to constant labour in raising the necessaries of life for the whole, and who, in the evenings, find an equivalent for the toils of the day, in the undisturbed possession of domestic enjoyment, arising from the innocent prattle of their children, and the mutual exchange of their attentions and good offices, without which even the highest situations would be insupportable.' p. 12. 13.

As to minerals, the county is full of coal and limestone, articles of infinite importance to the comfort of society and to the prosperity of agriculture. With regard to water, except upon the summits of some of the ridges that run through the district, every part may be said to be well supplied. The river Tyne runs through its centre, drives a number of mills, and has some good falls on which machinery for manufactures might be erected.

The state of property is next described, from which it appears, that three fourths of the county belong to twenty-six proprietors. A short account of the houses of proprietors is given, and a more extensive description of farm-houses and offices follows, wherein we learn, that the farmers of East-Lothian are generally well accommodated in these important particulars. Indeed, we are led to reckon the goodness or badness of farm-houses and offices, a sure criterion whence agricultural prosperity may be estimated.

When treating of cottages, the author judiciously observes—

'Some people have considered the cottage system of this, and vari-

ous

ous other diſtricts, as admitting of much improvement: they have inſiſted on the advantages of increaſing their number, and thereby providing for the accommodation of people who might be employed in hand-hoeing, hay-making, and other neceſſary operations. If ſuch perſons were to reflect on what has generally happened, where extra cottages were kept, they might ſee cauſe to change their opinion, and leave matters to find their natural level. In fact, the cottages of this county are ſufficiently numerous to accommodate the people who can be regularly employed; and, unleſs work be furniſhed, how can an additional number be kept? No doubt, it would be deſirable, at particular ſeaſons, ſuch as ſummer and autumn, to have a greater ſupply of hands; but no farmer can keep ſuch for a whole year, merely that he may have the benefit of their labour for three or four months. At the ſame time, many farmers, who have more houſes than are required to accommodate their ordinary labourers, find it impoſſible to get tenants for them; becauſe the lower ranks, who muſt truſt to the public at large for employment, find it more convenient to reſide in villages, where they are at liberty to chooſe their own employers.' p. 49. 50.

Farms appear to be increaſing in ſize, a circumſtance inevitably occurring when huſbandry is proſperous. The author ſtates the ſmalleſt as paying 100l. of rent, while others are ſo high as 1500l. The medium, he thinks, may be 400l. We are inclined to rate it much higher.

The original reporter of Eaſt-Lothian, when treating of rent, gave it as his opinion, that one half in corn, and one half in money, was the moſt equitable mode, both for proprietor and tenant. His ſucceſſor thinks differently, and aſſigns ſubſtantial reaſons why the whole ſhould be levied in money. He ſays—

'Formerly, a good deal of the rent of this, as indeed of every other county in Scotland, was paid in produce, and continued to be ſo till within the laſt fifty years, when it was moſtly converted into money; and now nearly the whole rents of the county are paid in that way. Some proprietors, however, are of opinion, that one half only ſhould be paid in money, the other in kind; and aſſign, as a reaſon, that the profit or loſs ariſing from any material riſe or fall in the price of grain, would, in that way, be equally divided between the landlord and tenant. Such a mode of payment is apparently founded in equity and common ſenſe, and, ſo far as plentiful crops and cheap markets are concerned, is highly favourable to the tenant; but, in unfortunate years, ſuch as ſome we have lately witneſſed, in which the crops have been greatly deficient, and the prices uncommonly high, moſt of the great farmers, eſpecially thoſe upon new leaſes, would have been nearly, if not entirely, ruined by paying one half their rent in kind.' p. 56. 57.

Poor-rates, in the Engliſh ſenſe of the term, may be conſidered as unknown in Scotland, though, in ſeveral diſtricts, aſſeſſments, one half of which are paid by the proprietor, and the other half by the tenant, are not unfrequent. Indeed, ſo long as

thoſe who pay have the direction of the expenditure, there is ſmall danger of aſſeſſments arriving at a greater height than what is neceſſary to meet the depreciation which has taken place, or may take place, in the value of money. In East-Lothian, aſſeſſments are trifling; rarely, upon the tenant, exceeding a halfpenny on the pound of rent.

To the circumſtance of all land in the diſtrict being poſſeſſed under ſecurity of leaſes, the author attributes its early improvement. The endurance of leaſes, he ſays, was formerly 38, 57, or 63 years; but he adds, that, except in a few inſtances, they are not granted now for a longer ſpace than 19 or 21 years. Where land is in any thing like an improved ſtate, either of theſe may be reckoned a ſufficient number of years; but where the great and leading articles of improvement are wanting, a much longer period is neceſſary, otherwiſe improvements will either be imperfectly executed, or neglected altogether. With regard to the covenants betwixt the parties, the author ſeems to think that few of them are prejudicial to the farmer. A remark is made, which deſerves the attention of agriculturiſts. We ſhall give it in the author's own words.

'Upon every farm, the ſtraw and manure, at the expiration of the leaſe, ſhould be the property of the landlord, and by him conveyed, along with the buildings, to the incoming tenant, who, in his turn, ſhould leave them to his ſucceſſor; and all matters in diſpute ſhould be ſettled, not between the outgoing and incoming tenant, but between the farmer and the proprietor. Such an arrangement would have a good effect in more reſpects than one; whatever reſentment the perſon quitting the poſſeſſion might entertain for the man who had ſupplanted him, would be confined to his own mind, and, like moſt of the angry paſſions, where ſcope is denied them, die away and be forgotten, while the ſuperior means of his landlord would operate to make him fulfil his agreement without any diſpute; for there can be no manner of doubt that, upon many occaſions, men, reckoning upon the uncertainty of the law, in conteſts with their equals, even when they are doubtful of their right, would, without the ſmalleſt heſitation, give up the point to a ſuperior, with whom they thought themſelves unable to contend.

'It is to be hoped, however, that this obſervation will be underſtood, not as meant to ſupport the oppreſſion of the great, which their ſuperior means gives them the power of doing, but as a mode of preventing the diſputes of equals, who ſo frequently come into courts of law from a difference of opinion, or a claſhing of intereſts. To the honour of the proprietors of this county be it ſaid, that fewer actions have been brought againſt tenants, for the laſt 50 years, than in any diſtrict in Scotland; and in a great majority of ſuch caſes the tenant has been to blame.

'In regard to the rotation of crops, or the proportion of land kept under

under particular crops during the whole of a leaſe, any regulation of that kind, to thoſe who are acquainted with country affairs, carries abſurdity in the face of it. Innumerable circumſtances concur, every year almoſt, that oblige the farmer to depart from plans dictated by the beſt judgment, and to which his adherence would be attended with loſs to himſelf and the public. The conſequence therefore of any covenant, binding a tenant to a particular rotation during the whole of a leaſe, muſt be extremely obvious: beſides, the immediate advantage of good management is now ſo well underſtood, that it is the intereſt of every farmer to cultivate his land as highly as poſſible to the laſt day of his poſſeſſion. Any reſtricting clauſes ſhould be confined only to the laſt four or five years of the leaſe, and ſhould be directed chiefly to the quantity of graſs and ſummer-fallow left; to the ſtate of the land, when the graſs is ſown out; the quality of the land upon which it is ſown, and the quantity and kind of the graſs-ſeeds.

'Before quitting a ſubject of ſuch importance, it may not be improper to hint, that much benefit might ariſe from a general plan of leaſes being drawn up, not by men of the law, as they generally are, but by the proprietors and farmers, who certainly are the beſt judges of country affairs. Leaſes of that kind would contain no perplexing covenants, and, like our preſent ſyſtem of morals, would oblige the tenant to nothing but what was obviouſly calculated to promote his own intereſt. Indeed, if it is ever wiſhed that the advantage of proprietor and tenant ſhould be united, which they certainly ought to be, no method appears ſo well calculated to promote that purpoſe, as by having a form of leaſes, containing every neceſſary regulation, ſuited to the circumſtances of the county, drawn up under the eye of a committee of the moſt reſpectable proprietors and farmers.' p. 62—64.

Upon the ſection of Expenſe and Profit, the author ſpeaks like a man of ſenſe and obſervation. Some of his brethren drew bills on their imaginations, when diſcuſſing theſe points.

'Upon the ſubject of expenſe and profit, it is obvious that no ſurveyor, be his abilities what they may, will ever be able to procure information ſufficiently accurate to meet the public eye; the expenſe in every inſtance depending upon the mode of management; and the profit, upon good or bad ſeaſons combined with that management; together with climate, diſtance from markets, and many other circumſtances. Upon the beſt arable lands, the expenſe of ſtocking a farm of 200 acres may be about 1200l.; but if the farm is foul with weeds, or very much out of order, conſiderably more outlay will be required for the firſt four or five years of the leaſe. In ſome of the reprinted ſurveys, ſtatements of expenſe and profit are given, with much appearance of accuracy; but, however well ſuch ſtatements may look upon paper, it is obvious they cannot be correct, as no two farms of the ſame extent will be found to agree. It is certain, that, owing to the capital employed, and the ſkill and enterprize by which the Eaſt Lothian farmers are ſo eminently diſtinguiſhed, the expenſes of manage-

ment are greater than in almoſt any other diſtrict; and it is to be hoped that the attendant profits are in proportion; otherwiſe thoſe concerned would neceſſarily ſuffer in the firſt inſtance, and agriculture be ultimately injured.' p. 64. 65.

Huſbandry implements are next deſcribed. Theſe are claſſed under five heads: 1. Implements for tillage: 2. Implements for ſowing: 3. Implements for weeding: 4. Implements for cutting down, and carrying the crop: And, 5. Implements for ſeparating grain from the ſtraw, and cleaning it for market. Under the laſt head, a long account is given of the invention of the thraſhing machine, chiefly compiled from the account given in Weſt Riding of York ſurvey. Indeed, almoſt the whole of the accounts, lately publiſhed, of this important invention, are drawn from the ſame ſource, though their authors, in ſome caſes, have not had the candour to acknowledge with whoſe heifer they ploughed. The laſt paragraph of this ſection contains an appeal to the public, which we truſt will have a ſuitable effect.

'Upon the feelings of a great and generous nation, ever ready to patronize and reward genius, it is hoped the hiſtory now given of Mr Meikle's invention will not be loſt, and that he will ſtill have the ſatisfaction of knowing that his countrymen are by no means inſenſible of the advantages derived from his labours. Should any meaſure of remuneration be adopted, it will perhaps give the promoters an additional intereſt in its ſucceſs, when they learn, that this reſpectable character, though in the 86th year of his age, is in full poſſeſſion of his faculties, and likely to live many years.' p. 80.

The ſixth chapter is on *enclofing*. Here we muſt remark, that the author's ſentiments are rather unfavourable to enclofing, at leaſt in ſuch a county as Eaſt Lothian, where the growing of corn is the chief object; but, on the other hand, he is decidedly of opinion, that where neceſſary, it ſhould be executed on durable principles. After deſcribing the manner in which cattle and ſheep were attended at the beginning of the laſt century, he goes on with ſtating the progreſs of enclofing ſince that period.

'That ſuch was the ſtate of Scottiſh huſbandry at the beginning of the eighteenth century, is confirmed both by traditionary and written hiſtory. About the year 1720, the firſt enclofures by farmers were executed on the eſtate of Ormiſton, under the auſpices of the celebrated John Cockburn, whoſe memory will long be reſpected by Scottiſh agriculturiſts; but, though the practice was imitated by ſome, more than forty years elapſed before it became general. About 1745, the barony of Byres was let, by the late Earl of Hopetoun, under improving leaſes; and, at this time, it is the moſt regularly enclofed eſtate in the county. Since the middle of the century, the practice has extended rapidly, and there are few arable farms in the lower diſtricts which are not at leaſt partially

partially enclosed. Even the land upon the coast, which continued longer than the interior in an open-field state, has lately received this improvement to a considerable extent.

'It would be saying too much, however, to affirm, that fences have always, in this county, been constructed on right principles, or preserved afterwards with sufficient care; in fact, the very reverse has been frequently the case, and it is not difficult to discover the cause.

'East Lothian, generally speaking, may be regarded rather as a corn district, than one either naturally or artificially calculated for rearing or feeding cattle or sheep. To the mere corn farmer, enclosures are seldom attended with much advantage, sometimes with positive loss; one so circumstanced is not therefore stimulated by his interest to pay such attention to his fences, as a person employed much in grazing. It is doubtful, indeed, in many cases, whether, where corn is the great object, the advantages of enclosing be equal to the expense, especially taking into account the waste of ground which is a concomitant of the practice. A tenant, who holds on no longer a tenure than a lease of 21 years, cannot be reimbursed for the expense of erecting fences, and, therefore, pays little attention to an improvement which can at best yield him but little benefit. Obliged by his lease to enclose, he accounts it a burden, from which the landlord may ultimately derive advantage, but from which he can expect none himself. He therefore makes his fences in the easiest manner possible, and pays little attention to them afterwards; at his departure, he may be obliged to pay, for the deficiencies, a sum of money which, however large, is seldom sufficient to put the fences in the condition specified in the original agreement.

'The Earl of Hopetoun judged very wisely, when he let the barony of Byres. The leases were for twenty-one years, renewable twice, on paying a fine, and having the enclosures in a certain state, when the renewal was required. By this mode, interest and duty became so connected, that the former was a sufficient motive for the performance of the latter, whether enclosures were or were not beneficial to the system of husbandry pursued.

'Were we to give an opinion upon the subject, it would be, that enclosures, where necessary, should be executed by the proprietor, who has a permanent interest in their success, and ultimately reaps all the benefit. The tenant's capital should be reserved entirely for the cultivation and improvement of the soil; if it be diverted to other purposes, and laid out in works which, at best, yield but a distant profit, he is rendered so much the less able to accomplish what properly belongs to him. If landlords choose, however, to devolve this work upon their tenants, the plan of the Earl of Hopetoun particularly deserves their attention, as best calculated to secure the end which they have in view. In short, if it be desired to have land substantially enclosed, it must either be done at the proprietor's expense, or a fair prospect of remuneration held out to the tenant. When ground is once enclosed in a proper manner, landlords should take care that the fences are not suffered

to fall into decay; it is not sufficient that an outgoing tenant pay a sum of money, in lieu of repairs, which may never perhaps be properly executed.' p. 82. 83. 84.

The chapter on arable land is undoubtedly not the least important branch of the work. The first section is on tillage, from which it appears, that, seventy years ago, nearly all the ridges in the county were of a serpentine form, though now they are generally straight and regularly formed to different breadths, according to the nature of the subsoil on which the surface is incumbent. The second section is on summer-fallowing, a practice introduced about the beginning of last century, though the disputed point by whom it was introduced is less undetermined. No doubt a description of the practice is of greater utility to the public than a controversy concerning him who introduced it; and this description is given with considerable precision. The rotations generally adopted are next entered upon; and those are detailed as relative to dry gravelly loams, deep loams on a dry bottom, heavy loams on a retentive bottom, thin clays and links. It is impracticable for us to do more than merely mention these things, the limits of our work being inadequate to a more particular analysis. It may be observed, in general, that the author is friendly to the alternate system, though he admits that, in certain cases, cross-cropping has been successfully practised.

The crops commonly cultivated are next detailed, together with those seldomer attended to, namely, cabbages, carrots, rape, woad, and lucern. The different processes of management of these crops, particularly of wheat and turnips, are amply illustrated. In short, with the practical farmer, this chapter must be estimated as the most valuable part of the publication.

In the original report to the Board, it was stated, that potatoes were introduced into this country from Ireland during the year 1740, when an uncommon scarcity prevailed. We always suspected that there was an error in this statement, and are now satisfied of its being nothing but an old wife's story, though repeated in the present publication. In the Caledonian Mercury of Tuesday 21st November 1721, which lately fell into our hands, we observe that Archibald Sheil in the Covenant Close, advertised potatoes for sale in bushels, pecks, or smaller quantities. Perhaps, at that time, this valuable root was only cultivated in gardens.

The management of grass land forms the subject of the eighth chapter. This is separately considered under the heads of, 1. Natural meadows and pastures; 2. Artificial grasses; 3. Hay harvest. We do not perceive any thing of much importance urged on either of these. The fourth section is on Grazing, which the author states as not carried on to the same extent as in the counties of

Berwick

Berwick and Roxburgh. We may add our hopes, that it never will be carried on to the like extent as in these counties, because such a change of system could alone be occasioned by a previous change in the political and social state of the country. As long as the metropolis remains in a flourishing state, so long must the culture of grain be predominant with East Lothian farmers, because a ready market is thereby furnished for the articles produced. We grant that, if butcher meat should rise in price, and the price of grain be kept down to please the foolish notions of our manufacturers, the husbandry of East Lothian may gradually take another bias. Butcher meat cannot be imported from foreign countries, what is proper for shipping excepted; therefore it must always maintain a price proportionable with the demand: whereas corn is an article capable of being brought in perfection from any distance; consequently, cannot rise in price in proportion with the demand, unless the trade meets with greater protection than has hitherto been conferred on it.

East Lothian does not make a great figure in the articles of Orchards and Woods; therefore these two chapters shall remain unnoticed. The eleventh chapter is on Waste Lands, which, for the honour of the county, is not a prominent subject. The waste land that remains, is chiefly confined to the district of Lammermuir, which certainly, in few cases, can be profitably cultivated. In that district a large common, originally granted to the town of Dunbar, is situated, which, by use and wont, has become the property of the neighbourhood. That it would be of public advantage to have it held in severalty, is indisputable; because, possessed by all, it gives benefit to none. Taking the Scotch act of 1695 into consideration, we are fully of opinion that the interference of the Legislature is necessary, before a division could be accomplished, though the author states, that no less a man than Mr Mathew Ross has given a contrary opinion. The *benefit* of common land is well explained in the following paragraphs.

'In the Lammermuir district there is a common, said to contain not less than 4000 acres, belonging to the royal burgh of Dunbar. It seems to yield no other advantage to the town than that of affording a holiday ride to the burgesses once in seven years, when they examine the marches. It does not seem clearly understood how far the right to this common extends. In former times all the proprietors of land within the presbytery of Dunbar were supposed to have a servitude upon it; and accordingly, during those months of the year, when the farmers had little to do, summer-fallowing being little practised, they were accustomed to send their horses, from all quarters, thither to graze. No person now lays claim to that privilege, except the farmers in the immediate neighbourhood, and who pasture their sheep and cattle on it.

'Some parts of this extensive waste seem to be capable of cultivation;

tion; but it is very probably condemned to perpetual ſterility. It cannot, as is ſuppoſed, be divided by the conſent of all parties having intereſt, or by a ſpecial act of Parliament for the purpoſe; the former of theſe it would be calculating too much upon the good ſenſe and good nature of mankind to expect, and the latter might coſt more than the value of the ſubject. In its preſent ſtate, it is worth little to any perſon; it may be doubted, whether it does not produce more hurt than benefit to the farmers who ſend their flocks to it. A little more rent may no doubt be paid for the neighbouring farms, on account of this ſuppoſed privilege; a temptation is at the ſame time held out to keep rather more ſtock on them than they can well ſupport, while the number of animals ſent to paſture on the common, renders it impoſſible for any of them to obtain ſufficient food. Theſe things have uniformly happened in the caſe of every common where a *ſtint* has not been eſtabliſhed; and there is no reaſon to ſuppoſe that the farmers who live conterminous to the common of Dunbar, will eſcape evils which unfortunately have befallen all others who were placed under ſimilar circumſtances.' p. 168—170.

Indiſputably, it is one of the firſt objects of good huſbandry to free the ground from ſuperfluous moiſture; therefore, we are well pleaſed to notice, that this practice, as might be expected, is particularly attended to in East Lothian. From local knowledge, we are ſufficiently informed, that in no part of Britain are the headland and *gaw* furrows more properly cleaned out, than in that county; and we have obſerved on the wetteſt clay farms, even after a continued rain of ſeveral days, that not a drop of water was ſtanding whilſt the furrows were regularly diſcharging the ſuperfluous moiſture at the different cuts or outlets, as faſt as it advanced. Draining of a different kind is alſo aſſiduouſly practiſed, where under-water or ſpouts prevail, which, almoſt in every caſe, are carried off by means of drains of different ſizes, according to ſoil and other circumſtances. Theſe drains are filled with ſtones gathered from the land; or, where they cannot be obtained, with thorns and branches of trees, which, carefully packed, are little inferior.

We do not believe that *paring* and *burning* are practiſed in East Lothian; and yet the author makes a very decent ſection upon theſe operations. We never could aſcertain the extent of wiſdom which guided the Board when they preſcribed the like number of chapters and ſections for each report, becauſe ſcarce two counties are exactly under the ſame circumſtances.

Weeding is the ſubject of the next ſection; and here the author illuſtrates the ſuperiority of East Lothian huſbandry in a perſpicuous manner. Before deſcribing the *modus operandi*, he ſtates the advantages of removing the aboriginal inhabitants of the ſoil in a ſatisfactory way.

'This operation is of ſo much importance, in agriculture, that it well

well deserves to be treated as a separate branch of improvement; at the same time, it is so much attended to in East Lothian, as to merit particular notice in a survey of that county. The clearing of the land from weeds is so essential to good husbandry, that, if it be neglected, we may safely pronounce it impossible to carry on any other operation to advantage. The farmer who does not clean his land, can never reap good crops from it, never so good, at least, as he might obtain. He may bestow plenty of manure, and he may reduce his ground to a fine mould, in order that his plants may readily extend their roots in search of the nourishment which he provides for them; but every weed left in the soil must take so much from the artificial plants which it is his object to rear. The natural inhabitants of the soil will have their full share of every benefit bestowed, if the strangers placed among them should starve. The manure bestowed, in such circumstances, may be regarded as in a great measure thrown away; one half of it would unquestionably produce greater effect if enjoyed exclusively by the useful plants. In truth, it not unfrequently happens, that very rich fields, overrun with weeds, yield much worse crops than others of a far inferior quality, which are kept clean.' p. 176.

The subject of manuring is afterwards entered upon. It would appear that the East Lothian farmers are now much more attentive to collecting, preparing, and applying manures, than formerly. They cut their corn crops low, and thereby provide an increased quantity of materials. They prepare these materials with greater accuracy, consequently use them with greater success; and they apply them with frugality and minuteness, of course, with more advantage to the soil and the different crops that are to be cultivated. Lime is also extensively used; but, what is rather surprizing, the quantities bestowed upon an acre of ground are double, in some cases quadruple, what is applied in other counties.

Chapter 13. is on Live Stock. It does not appear that the breeding system is much attended to in East Lothian; but, on the contrary, that black cattle, sheep, and horses, are generally got from other districts. The black cattle are generally purchased at the Falkirk Trysts, and at Hallowfair in Edinburgh; wintered in the straw yards, and fed next summer on grass. The sheep are either ewes of different breeds purchased for the sake of rearing lambs for the butcher, after which the mothers are kept on till ready for the shambles; or wedders, chiefly from the North Highlands, fed on turnips, which are sold when fat in the spring months. In the mountainous or Lammermuir district, sheep, both of the Forest and Cheviot kinds, are bred, together with a few black cattle. As to horses, three fourths of those employed are purchased from the west country dealers as wanted, it being by many persons thought more convenient and cheap to purchase than to breed this useful animal.

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When diſcuſſing the ſection on horſes, the author offers the following obſervations, which are ſtrictly applicable to the economy of Eaſt Lothian.

'One will hardly be at a loſs to determine the character of a farmer, from the condition of his horſes. Very fine high fed horſes, exhibiting an appearance of being prepared for the market, may rather ſuggeſt the idea of idleneſs than of labour; but, on the other hand, lean ſpiritleſs creatures, worn out by toil and hunger, are the certain indications of a bad farmer, of one who is not thriving, and does not deſerve to thrive. The man, who uſes bad inſtruments, cannot have his work well done; and one important and primary ſtep towards good farming, is to keep the labouring ſtock in good condition. Horſes, regularly fed and regularly wrought, will perform a great deal of labour, without falling off, either in ſtrength or appearance; it is of great importance, therefore, to diſtribute the labour as equally as poſſible, through the various ſeaſons of the year, and if, as muſt ſometimes be the caſe, an extraordinary exertion ought to be made, it is of importance that the animals are in a proper condition for making it. When horſes do fall off, it requires much more to reſtore them, than might have kept them in a good condition.' p. 197, 198.

Hogs are kept in conſiderable numbers; and ſome farm yards, where attention is paid, are known to yield a handſome return from this apparently naſty animal. Every farm ſervant is allowed to keep one; and in this way their families are greatly benefited. Poultry are kept of late on a ſmaller ſcale than formerly; and, in our author's opinion, a poſitive loſs is ſuſtained by thoſe who keep them, unleſs they are fed at the expence of others. He declares war againſt pigeons; and, though the ſentiments offered concerning that bird are perfectly correct, yet we think his obſervations might have been reſtricted within narrower bounds, without injury to his argument. He is not more friendly to rabbits, and thinks 'it probable that a rabbit, which ſells at fifteen-pence, coſts the public half a crown.' The improved ſyſtem of huſbandry, he conſiders as unfriendly to bees; and, on this point, we believe he is not miſtaken.

The 14th chapter is on Rural Economy. In the firſt ſection, the author treats of ſervants and labour, and affords ſtrong arguments why all ſervants ought to be paid in *kind*, rather than in money; but we ſhall let him ſpeak for himſelf.

'The far greater part of the regular labour is performed by married ſervants, called *hinds*; a claſs more numerous here than in other diſtricts. Theſe dwell in houſes provided by their maſters, and receive their wages, wholly or chiefly, in kind; the circumſtances are ſo comfortable, under which they are generally placed, as to ſecure a full ſupply of ſuch ſervants at all times. Indeed, it is univerſally conſidered, and certainly is, an object of great importance to have a ſufficient num-

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ber of ſervants of this deſcription for working the horſes. They are more ſteady generally than young men; their families, and the property which they have acquired, give them a ſort of intereſt in their ſituation, and afford ſome ſecurity for their continuing longer in their place.

'The hind occupies a houſe, provided by his maſter, for which his wife works in harveſt; he has a cow kept all the year round; generally ten bolls of oats, three bolls of barley, two bolls of peas, all of the beſt quality upon the farm, ſeed corn excepted. He has likewiſe one peck of flax-ſeed ſown, and about the ſixteenth part of an acre of ground, well prepared and ſufficiently dunged for planting potatoes. His fuel is carried; he has his victuals during harveſt, which is always four weeks, ſometimes ſix; and when he carries corn to market, he has an allowance, provincially called *mags*. Thoſe, who are employed in ſowing and building the corn-ricks, have, beſides the ordinary wages, a pair of ſhoes and half a boll of wheat. On all well managed farms, the labour is carried on regularly at ſet hours: and though it is not underſtood that ſervants who work horſes are abſolutely exempted from extra work, yet they are very ſeldom required to do any thing of this nature.

'It is evident, that the value of a hind's wages, in money, cannot be accurately ſtated; that muſt vary according to the market price of the articles, in which he is paid. On an average of ſome years paſt, it could not be leſs than twenty-five pounds Sterling per annum.

'The circumſtance, which deſerves particular attention with regard to this claſs, and which renders their condition ſo much more comfortable than that of the labourers in many other places, is their receiving payment of their wages in the neceſſaries of life. They are far more comfortable than thoſe, who receive the ſame rate of wages in money, any where; they are generally more faithful to their employers, and infinitely more attentive to the intereſt of their families.—They have all the neceſſary articles of food continually at hand, and ſeldom need to purchaſe any thing conſiderable, except ſhoes. Their wives make linen from their own flax ſufficient for their families, and often cloth for other articles of dreſs. The quantity of corn which they can afford to ſell, with the ſurplus produce of their cows and hens, brings them as much money as fully anſwers every demand, and enables them to give a better education to their children, than is ſometimes obtained by perſons conſiderably above their condition, in ſome other parts of the iſland. There are few of this claſs, in Eaſt Lothian, who cannot read; moſt of them can write a little; none of them fail to have their children inſtructed in theſe neceſſary branches of education, while many of them get them taught a few of the rules of arithmetic. One ſees, about every farm-houſe, a number of children vigorous and healthy, decently clothed, and exhibiting every appearance of being well fed. Not an inſtance occurs of any of theſe people ſoliciting relief from the public, unleſs when they are, by ſome accident, diſabled from future labour, or overtaken by the infirmities of age.—Indeed, the times which are

hardeſt

hardeſt for the lower claſſes, in general, are uſually favourable for them; becauſe the corn and other articles which they have to ſell bears a better price, while what they have to purchaſe is not ſo much affected.' p. 207, 208, 209.

The next chapter is on Political Economy, as connected with agriculture. The important ſubject of public roads is firſt inveſtigated, and a kind of hiſtory given of the different acts of Parliament paſſed for repairing thoſe in Eaſt Lothian. Strangers often remark, and we believe with much truth, that the roads in Eaſt Lothian are inferior to thoſe of other counties, which remained longer in a neglected ſtate. Without entering upon that queſtion, it is enough to ſay, that many places of the great line of poſt-road, which runs through the county, diſplay neither ſcience nor genius, in the method taken to repair them. It would not be difficult to mark the ſource whence originates ſuch a lamentable deficiency; but this is foreign to our preſent purpoſe.

The advantages of regular markets, at which agricultural produce may be diſpoſed of, and the benefit derived by farmers from the weekly market at Haddington, are well deſcribed. In fact, the market at Haddington is a ſtrong ſupport to Eaſt-Lothian huſbandry, and gives it a ſpring which that of no other county in Scotland enjoys in the like extent. Perhaps the queſtion, Whether it would be for the public good, were all grain expoſed in the public market? is laboured too much. The negative is abundantly evident, to any perſon acquainted with ſuch buſineſs; and thoſe of a different deſcription will not be eaſily driven out of their fooliſh notions.

In the ſixteenth chapter, the author, when treating of agricultural ſocieties, ſeems to think that more uſeful information may be gained by attending the dining-clubs at Haddington, on a market-day, than at meetings profeſſedly held for diſcuſſing agricultural ſubjects. We perfectly concur with him in theſe ſentiments, and that for the very reaſons aſſigned, viz. that greater freedom and eaſe, conſequently, a greater latitude for remark, neceſſarily prevails at ſuch clubs, than at meetings managed in a formal manner; where, unleſs ſome perſon of activity take the lead, and has influence enough to ſecure the attention of his neighbours, the members may wrangle for a few hours, and part as wiſe as they met.

On the diſcrepancy of weights and meaſures, the author makes a number of uſeful obſervations. The like remark is applicable to his account of the practice adopted for ſtriking the annual fiars of grain, which he thinks ſhould be amended.

Chapter 17th, treats of the obſtacles to improvements. Here, the author allows that fewer obſtacles to improvement prevail in East

Eaſt Lothian, than in moſt other counties; but ſtill, he conſiders ſeveral practices as hoſtile to improvement, which might be removed without leſſening the intereſt of proprietors. He aſſumes, as a firſt principle, that, whatever deters the tenant from laying out his capital ſtock, muſt operate as an obſtacle to the improvement of the ſoil. Reaſoning upon this principle, he ſets down the practice of Scotland, whereby farmers are prevented from ſubſetting their farms, as inimical to the proſperity of agriculture; and aſſigns a number of reaſons in favour of their enjoying ſuch a liberty, which appear to us founded in truth. Indeed we could at no time diſcover what advantage it was to proprietors to reſtrict them from ſuch a liberty; and are ſatisfied, that, till the leaſe of land is equally a marketable article with the fee-ſimple or freehold thereof, improvement will not be carried to its utmoſt height.

The general clauſe in leaſes, binding tenants to manage according to the rules of good huſbandry, is alſo viewed as unfriendly to improvement, in ſo far as it tends to prevent capital ſtock from being carried to the practice of agriculture. The author juſtly remarks, that, whilſt the general clauſe binds a farmer to do nothing, it may be interpreted in ſuch a way as to make him do every thing. He adds,

'If a landlord conceive a diſlike to his tenant, or imagine that he is not managing properly, the rules of good huſbandry afford him convenient ground for an action; and the miſchief of ſuch litigations is, that, though they may be carried on long, and greatly to the injury of both parties, they never determine any thing in the end; they are not decided on any general fixed principle, either legal or agricultural.' p. 263.

The entail laws are alſo regarded as oppoſing improvement. The proprietor who poſſeſſes under a ſtrict entail, is certainly no more than a mere liferenter; and his object, eſpecially if he has no heirs of his own body, muſt be limited entirely to what the ground will yield him in the ſtate wherein it is placed at the time; becauſe he knows well, that any improvements he can make, even under the proviſions of the act 1770, will not reimburſe him for ſuch outlays and advances as he may be neceſſitated to make before they are executed. The mode of letting land by receiving private offers, is alſo viewed as againſt the intereſt of farmers, and contrary to every eſtabliſhed cuſtom in other lines of buſineſs. In ſhort, ſays the author,

'Every thing that tends to diſcourage the profeſſion of a farmer, to embarraſs his exertions, diminiſh his fair profits, or leſſen his aſſurance of reaping the full benefit of all his labour and expenſe, muſt be regarded as hoſtile to improvements in agriculture. Every thing of this nature muſt tend to divert capital from the cultivation of the ſoil, and throw it into other channels. It muſt not be ſaid, that the obſtacles to improve-

ment,

ment, which have been mentioned, are imaginary, becauſe agriculture, notwithſtanding, flouriſhes. Theſe obſtacles, it will be readily admitted, are far leſs conſiderable than ſome which exiſt in other places, and, therefore, our rural affairs are proportionably proſperous: but there is no reaſon to doubt, that, if theſe were removed, we ſhould proſper ſtill more. A giant may travel at a tolerable rate, under a load which would cruſh a dwarf to death; but it would be erroneous to conclude, that he could travel no faſter if his load were removed.' p. 265.

The means of improvement furniſh matter for the 18th, or concluding chapter. Theſe, it is ſtated, conſiſt in removing the obſtacles mentioned in the preceding chapter, and introducing ſome alterations in the practice of agriculture: *1ſt*, Extending encloſing to a certain length, but chiefly in the Lammermuir diſtrict: *2d*, Draining every place where ſuperfluous moiſture remains: *3d*, Applying calcareous manure more extenſively; planting either for ornament, ſhelter, or profit. The author juſtly thinks, that, were tenants paid, at the end of their leaſes, according to the value of the plantations reared by them, much land, in every farm, uſeleſs for other purpoſes, would in this way be improved. The length of this article precludes us from enlarging upon this laſt mentioned mean of improvement; but, undoubtedly, we think that, were ſuch a plan adopted, incalculable advantages might be gained.

We ſhall conclude our account of this intereſting work, with the following extract, which has our unqualified approbation.

'Though Eaſt Lothian has advanced far in improvement, and preſents a ſpectacle highly gratifying to the eye, which delights in contemplating the proſperity of the country, the picture is, no doubt, in ſome places, deficient in uniformity, in correctneſs. Here we ſee ſomething deformed, there we perceive ſomething wanting; we can conceive many things which are requiſite to perfect the beauty of the piece, and render it uniformly pleaſing. If the few obſtacles which have been noticed were entirely removed, improvements would certainly advance more rapidly; if encloſing, draining, liming, and planting, were carried forward, as far as circumſtances require, the face of the county would be greatly beautified, and its produce much increaſed.

'Many improvements of great importance may be ſaid to have been introduced into this county at a late period, yet they have now become univerſal, and are practiſed with a degree of perfection not often excelled. We need no better proof of the improved ſtate of huſbandry in this diſtrict, than the price which its grain bears in the market, the amount of its rents, and the opulence of its farmers. Every effect muſt have an adequate cauſe; there muſt be ſomething in the ſoil, in the climate, or in the moral excitements to induſtry, which produces theſe conſequences. The ſoil is not ſuperior to many parts of the kingdom; in fact, it is inferior to ſome places which are behind it in improvement; tho

the climate is far from being remarkably genial, for there are some important crops, grass and turnips, for example, which are occasionally almost lost from its uncertainty. We must seek this superiority then in moral causes; these we shall leave the reader to collect from the preceding pages, and only take the liberty to recapitulate a few of the circumstances, which, though not peculiar to this county, may not be found united in the same manner in many other places.

'All ground is occupied on leases of moderate length; there are few or no restrictive covenants that can be said materially to affect improvements, but tenants are left freely to pursue the plans which seem best to their own judgments, or are most agreeable to experience; the farms are generally large; no unknown burdens lye upon the tenantry, which can increase with their increasing activity; when a person takes a farm, he knows every burden which he has to bear during the currency of his lease, except those taxes which he pays in common with all his fellow subjects. Add to these, that the farmers possess abundant capital to execute what improvements they deem necessary. If the reader is not disposed to regard these as the principal causes which have tended to raise the husbandry of East Lothian to its present respectable rank, he may try to find others more adequate to the effects. It will probably be found, however, that the state of agriculture *generally* corresponds to the prevalence of these causes, and that, where they all operate freely, a naturally poor district may rank higher than others which enjoy a richer soil and more genial climate.' p. 276—278.

The errata, owing to the work being printed in London, are numerous, some of them of such a nature as to make us believe that the person who superintended the press was but slenderly acquainted with agricultural practices. As for instance, page 85. we read of walls *cased* with stone and lime; page 91. of wind breaking the *shew*; page 98. of a rotation *fallowed* on the best clays; page 128. of the drill-*harrow*; and numberless instances of the like nature.

N.

General View of the Agriculture of Norfolk. Drawn up for the Consideration of the Board of Agriculture and Internal Improvement. By the Secretary of the Board. 1804. 532 pp. London, Nicol, &c. Edinburgh, Creech.

THE valuable and well cultivated district of Norfolk was originally surveyed by Mr Kent, a gentleman of great abilities; and the second edition of his Report was favourably noticed in our third volume, p. 489, *et seqq.* It would appear, however, that the Board of Agriculture considered another survey to be necessary; therefore employed their secretary to travel over the ground afresh, so as a more complete account might be presented. We have perused the result of his investigations with every degree of

attention, and are ſorry to ſay, that little new light is thrown upon the rural economy of a diſtrict, juſtly conſidered as approximating to perfection. We have, to be ſure, a vaſt number of looſe and confuſed minutes; but theſe, at the beſt, can only be viewed as a ſtock of rough materials, not as furniſhing any thing like a regular and correct account of Norfolk huſbandry, from which the public can be benefited. In ſhort, many of the remarks given in our ſecond volume, on his ſurvey of Lincolnſhire, are preciſely applicable to the one before us. Information is accumulated in waggon loads; but the carriages are upſet, and their contents thrown on the ground without order or regularity.

Norfolk is an extenſive diſtrict, containing ſomething near a million of acres, three fourths of which are ſaid to be good ſoil; and enjoys a climate well calculated for bringing field produce to perfection. It is advantageouſly ſituated in reſpect of navigation, as no part of it lies at a greater diſtance than thirty miles from the ſea, or navigable rivers. In general, eſpecially on the light ſoils, the farms are extenſive, and poſſeſſed by active and enterprizing men. The proprietors have, in moſt caſes, acted liberally in their tranſactions with the occupiers; and ſome of them, particularly Mr Coke, M. P. for the county, are eminently qualified to practiſe agriculture themſelves.

Having premiſed theſe general remarks, we ſhall proceed to notice ſome parts of Mr Secretary's report to the Board. Though plentifully ſtored with facts, it is lamentably ſcarce of obſervations; therefore, our range is conſequently much contracted.

Speaking of rent, he ſays,

'The circumſtance which makes the rent of a county an object of any intereſt in an agricultural report, is its being a confirmation of the deſcriptions which are given of ſoils. The terms uſed in defining land, rich, poor, mixed, ſtrong, light, &c. muſt in many caſes be vague; but when ſand is noted at 2s. 6d. an acre, or *rich* or *ſtrong* at 20s. to 30s., the reader has more explicit information. When a man is told that ſand produces ſix or ſeven quarters an acre of beans, the fact does not convey any knowledge; but if it be added, that the rent is 30s. an acre, it becomes eaſy to gueſs what the ſoil is. The minutes, however, of rent, are not numerous: on many occaſions it is an inquiry prudently ſhunned, and on ſome, it is not an object of conſequence.' p. 36.

We ſhould ſuppoſe produce to be the real baſis of rent, and that a more preciſe idea of the quality of the ſoil is given, by mentioning, that it will carry ſix or ſeven quarters of beans per acre, than by adding that the rent is 30s. per acre. The actual rent furniſhes no *datum* on which the value or the nature of ſoil can be eſtimated; becauſe the ſum covenanted to be paid depends on other circumſtances, namely, the length of the leaſe, the obligations on the tenant, and the temper of the parties who bargained.

Very

Very bad land in many parts of the iſland is ſet at 30s. per acre; but none, except ſoils of the firſt quality, and which are kept under the higheſt culture, will yield ſix or ſeven quarters of beans. Rent, however, is much lower in Norfolk than in many other diſtricts of leſs celebrity. Take the following as an inſtance.

'*Happing.*—Great tracts let at from 25s. to 30s.; and the whole at above 20s. on an average. The northern part of the hundred contains ſome of the fineſt ſoil in the county. But there is in other parts of it much low land, fens and commons encloſed, and ſome let in 1802 for the firſt time; the worſt worth 12s. an acre, the better ſort 20s. The Biſhop of Norwich has let ſome as high as 26s.

'Happſborough, Walcot, and Bacton, I have heard in converſations, valued too high to note: much lets at 30s., and well worth that rent. Sandy loam on a clayey loam bottom; but ſound.

'*Tunſted.*—About North Walſham, raiſed one third in 20 years. Weſtwick and its vicinity, 20s. to 25s.; but there is ſome much poorer. Scotto 20s. to 25s.; ſome at 15s. The beſt ſoil in the hundred is in the maritime part.

'*North and South Erpingham.*—Much of North Erpingham is in the better ſand diſtrict. In the ſouthern part of it, much at 20s. In South Erpingham, great tracts very rich, and as high in rent. Around Coltiſhal, 16s.

'*Taverham*—Conſiſts of various ſoils, and varies much in rent; ſome up to 20s., and ſome as low as 5s.

'Korſted, Belough, and Wroxham, 10s. Raiſed one fourth, and ſome one third, through moſt of this hundred, in 20 years.' p. 38–9.

Mr Secretary is very modeſt when he ſpeaks of tithes.

'So much,' he ſays, p. 40, 'has been written on the great national queſtion of tithes, and their commutation, that any general obſervations are unneceſſary. All that can with propriety be inſerted here, are the notes taken of the compoſitions per acre.'

The general average of 37 minutes, where tithes were compounded, is 4s. 9d. per acre. At Artleborough they are all gathered, and the owners aſſign this reaſon for not encloſing their immenſe commons.

But poor-rates are more ſeverely felt than tithes; for, from an average of forty minutes, they appear to amount to 5s. 6d. in the pound. Mr Secretary ſeems to think that the poor laws ſtand in need of reviſion; and here we moſt cordially agree with him.

The ſection on leaſes contains ſome excellent ſentiments.

'The great improvements which for 70 years paſt have rendered Norfolk famous for its huſbandry, were effected by means of 21 years leaſes; a circumſtance which very fortunately took place on the firſt attempt to break up the heaths and warrens in the north-weſt part of the county. Theſe leaſes eſtabliſhed themſelves generally; and were, more than any other cauſe, powerfully operative in working thoſe great ameliorations of waſtes which converted that part of the county into a garden.

'To explain generally the neceſſity of long leaſes, would at this time of day be an idle diſquiſition. I never heard any arguments againſt them which carried the leaſt weight. Exceptions may, and will occur. In lands which are immediately around the manſion, it may be prudent to grant ſhort tenures; and when a landlord is willing to take upon himſelf all thoſe expenſes which a tenant ſubmits to, merely becauſe he has a term of 21 years, it is obvious that there is no *neceſſity* for a long leaſe; but, in general, it may be held for ſound doctrine in Norfolk, that an eſtate can neither be improved, nor even held to its former ſtate of improvement, without long leaſes.

'Sorry I am to perceive, that contrary ideas ſeem to be gaining ground in this county; that ſome landlords will give no leaſes, and others only for 7 or 9 years. That the agriculture of the country will ſuffer, in proportion as theſe ideas prevail, I have not a doubt; and it is a very fortunate circumſtance, that Mr Coke, the poſſeſſor of the largeſt eſtate in it, adheres ſteadily to thoſe principles which improved his noble property, never giving a ſhorter term than 21 years.

'The views of landlords who act otherwiſe may eaſily be conceived; they have a quicker return of thoſe opportunities for advancing their rents than occur with longer terms; and the late ſcarcities, among their other evils, have added much to this. The tenants' profits (ſuppoſed to be greater than in fact they were) glittered in the eyes of landlords, who were apt to think they had not a fair proportion of the product. But if ſuch temporary fluctuations are to have weight in regulating the rent of the land, the medium ſhort of a *corn rent* will be difficult to find; and no leaſes at all are likely to be the conſequence: what ſuch maxims would produce *in Norfolk*, are eaſily conceived.

'But in the main object of raiſing rents, confining myſelf to the county I treat of, I have great doubts whether an eſtate in 43 years, will not be let for much more after two leaſes, than after ſix. Every ſort of improvement, and what is of as much conſequence, the common courſe of the huſbandry, in points which no covenants can touch, will tend to improve the land in one caſe; while in the other, the tenant will look to the duration of his term before he ſpends a ſhilling, or gives an order for a cart or a plough to move. The ſilent operation of ſuch a conſtantly influencing motive, will gradually affect the farm in a manner that muſt be ſeverely felt; and is a perfect contraſt to the ſpirit of animated exertion which pervades every part of the farmer's buſineſs, when he looks forward to a long period for his remuneration.' p. 47–9.

Wheel ploughs have been long uſed in Norfolk, though Mr Secretary, without giving any opinion of their merits compared with ſwing-ploughs, thinks them ſuſceptible of much improvement.

'The common Norfolk wheel-plough varies from other wheel-ploughs in three circumſtances: 1. By the high pitch of the beam; 2. By the wheels being, when in work, brought ſo near to the point of the ſhare; 3. By the general lightneſs of the tool, when compared with ſome others.

'Whether

'Whether the second circumstance in the Norfolk plough, that of the points in the periphery of the wheels which touch the ground, being so near to the share point, is really a benefit, remains a question, and greatly merits experiment to ascertain.

'The general lightness of the plough is probably a merit, when the work is easy; but when we find it not an uncommon practice to load the body of the tool with a great stone to keep it steady, doubts will suggest themselves that the mathematical construction is erroneous.

'Examining the ploughs of Mr Francis at Martham, from perceiving the beams not mounted so high as in common, he remarked, that the wheelwright made his upon his own plan: he has ploughed much with his own hands, and knows that when they are very high, the plough is apt not to cut a flat furrow, nor to go close at heel; he therefore lowers the beam, and the share is two feet from the points where the wheels touch the earth; and the beam-ring being in the centre hole, the plough will then go alone without holding.

'Mr Hill remarks, that there are three sorts of plough-wheels used in West Norfolk; first, all of cast-iron; second, wooden boxes, spokes, and fellies shod with iron; third, wooden boxes and spokes, with rims of hammered iron. The first are good and safe while at work, but very apt to break as they move through stony lanes; the third are light, and do well in dry weather; but the second are the most durable; he thinks they last out ten sets of the cast-iron, and two sets of the iron rims. He uses the cast shares of Messrs Gurney & Co.; No. 6. of these he much approves. Cast-iron wheels are 10s. 6d. a pair; wooden ones 30s.

'It would be improper to omit noticing the high opinion which the great agriculturist, Mr Coke, has of the Norfolk wheel-plough, which goes so far as to induce him to be always ready to bet it against any other, on any soil; and he has in several trials been successful. But for want of minutes being kept of such trials, and, above all, for want of the force exerted being accurately ascertained, these experiments have not been attended with the conviction which might have been the consequence.

'From the preceding minutes it appears, that some doubts have actually been entertained, by very able and practical farmers, on the usual structure of this plough; and Mr Reeve, varying the form in the length of beam and the mould-board, when he wants to *whelm* the furrow well (that is, turn it completely over), confirms the propriety of our considering the structure of this plough as not well ascertained.

'In addition to this observation, I have to remark, that in passing through almost every part of the county, I never omitted any opportunity of following ploughs at work, and noticing their steadiness and other circumstances; and I remarked two very deficient points—they do not *generally* go close at heel; and when I desired the men to quit their hold, and let the plough go alone, not one in twenty would do it, even for a single rod; now, a *wheel*-plough must be badly constructed that will not stand this trial, which, for a short distance, is perhaps the best criterion of a swing-plough.

'I have a high opinion of the Norfolk plough, when well conſtructed, and offer theſe remarks merely to inſtigate the gentlemen of the county who take any pleaſure in rural mechanics, to aſcertain theſe circumſtances by experiments which are not difficult to make, and would tend powerfully to give the wheelwrights and blackſmiths more certain rules to work by, than they poſſeſs at preſent.' p. 52–55.

The chapter on Encloſing, which extends to 112 pages, is exactly in Mr Secretary's real ſtyle and manner. We muſt be excuſed for declining an analyſis of this formidable chapter, though perhaps the following ſamples, ſelected at random, may ſatisfy our readers that their loſs on this occaſion is not conſiderable.

'BROOK.—1800.

'*Quantity.*—200 acres of common; no open field; all will be ploughed, except 40 acres; the value will be above 20s.; quality price, 15s.; never paid any thing but to jobbers and idle fellows.' p. 88.

Again—

'*Poor.*—They kept geeſe on the commons, of which they are deprived. But in fuel they are benefited: an allotment not to exceed $\frac{1}{10}$ let, and the rent applied in coals for all not occupying above 5l. a year: this is to the advantage of thoſe at Southborough, having enough allowed for their conſumption. At Cranworth the poor are more numerous, and the coals of little uſe. The allotment for the poor at Letton, is 17 acres. Ten are left as a paſture for the cows of thoſe who rent under 5l. *per annum.* Seven are let to the higheſt bidder, and the money is applied to the purchaſe of fuel. The number of thoſe who keep cows, is five.' p. 94, 95.

Again—

'SHROPHAM, 1798.

'*Poor.*—About 50 or 60 acres for fuel: very few kept cows; and will keep better than before: ſeveral little proprietors of two or three acres, and will now have double allotments added, and be better able to keep.' p. 160.

The chapter on Arable Land is ſtill larger than the one on Encloſing, filling no fewer than 183 pages. To analyze it, would not only be an impracticable, but an unprofitable taſk; for to us it appears as ſomething like a regiſter of the proceedings of all the farmers in Norfolk for ſeveral years paſt, wherein the accounts of one farmer are directly contradicted and oppoſed by thoſe of another, whilſt the opinion of the ſurveyor is almoſt in every caſe withheld. Had Mr Secretary rejected trifling and injudicious matters, and reported only the more intereſting and rational ones, he might have ſpared the endleſs and fatiguing repetition of opinions and practices of Meſſrs X, Y, Z, &c. &c. without depriving the public of one atom of uſeful information. The minds of agriculturiſts, inſtead of being enlightened and improved, muſt be diſturbed and confuſed by ſuch a heterogeneous maſs of *raw* materials, though, had the Secretary ſtepped in, and, like a doc-

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tor in the art, pronounced ſentence when under-graduates differed, a beacon might have been erected to keep tyros in huſbandry clear of the ſhoals of malpractice. That we are not over ſevere in theſe obſervations, will appear from a few extracts.

'At Catfield I found a variation; here the courſe is a ſix-ſhift huſbandry:

1. Turnips.
2. Barley.
3. Clover, &c.
4. Clover, &c.
5. Wheat.
6. Barley.

'Mr Cubit practiſes this in common with his neighbours; the ſeeds *riffled* the ſecond year before harveſt, that is, *rice-baulked*, *raftered*, half ploughed: ſome *ſcaled*, a clean earth, as thin as poſſible: the management Mr Thurtell reprobated for his ſoil: and what is ſingular, they ſeem to do it with equal reference to dibbling and broad-caſting.' p. 199.

'Mr Burton, of Langley, ſummer-fallows the ſtrong land at Hempnal, for barley and wheat alternately; taking beans after either, and wheat after the beans.' p. 213.

'Mr Salter, at Winborough, applied ſummer-fallowing, the firſt year of his taking his farm, much of which conſiſts of various loams and ſands, on a ſtrong marley and clayey bottom, and abounding with ſprings; but, after that, he has never fallowed, and never will.—His expreſſion was, "*a man is a madman that ſummer-fallows.*" He is very regularly in the four-ſhift courſe of,

1. Turnips.
2. Barley.
3. Clover.
4. Wheat.' p. 214.

'Mr Coke, at Holkham, ſows none broad-caſt; all are drilled.

'Mr Repton, at Oxnead, drills turnips at one foot, and prefers the method.

'Mr England, of Binham, tried the drill laſt year; but he found the plants too thick in the rows, and has obſerved the ſame in ſome other caſes; they are then difficult to hoe.

'Mr Reeve, of Wighton, drilled them for two years at 11 inches and a half, but has left off the practice.

'Mr Henry Blythe, of Burnham, though a very ſtaunch friend to drilling corn, from 12 years experience, does not drill turnips, finding that they are not ſo eaſily hoed.

'Mr Styleman, at Snettiſham, drills them at 12 inches, and he thinks they hoe better than broad-caſt crops, and that the produce is greater.' p. 226.

But the contradictions are endleſs; and to compare them accurately would tire even an index compiler.

Many parts of this arable chapter are not to be underſtood without a gloſſary. Indeed no dictionary is yet compoſed which can lead the Engliſh reader to comprehend our author's meaning. Take the following examples.

'At Oxnead, all (turnips) drawn for feeding on the *ollonds*, &c. till Chriſtmas, or till too *jammy*, that is, too much trodden from moiſture, then into the yards. But Mr Repton ſteams them, mixing tur-

nips and their liquor with chaff, cut by horſe work, and giving it with much ſucceſs to young cattle, &c.' p. 229.

'Mr Margateſon, of North Walſham, breaks up the ollonds of the ſecond year, by *riffling* before harveſt; he harrows down, and ploughs as fleet as he can; after that, a full pitch for dibbling; he is clear that this is the beſt way for the wheat, but as certainly a loſs in the barley crop; for the previous tillage has brought the flag into ſuch a ſtate, that the wheat exhauſts far more of the benefit than when ſet on a whole furrow.' p. 274, 275.

'Mr Repton, at Oxnead, *riffles* his ollonds before harveſt, then, however, croſſes and harrows, and works well, as it ſhould be looſe for *dabbing*.

'Mr Bircham, at Reepham, ſometimes riffles layers for wheat, but only on the ſtronger lands: on light lands, dibbles in on whole furrow; ſometimes he dibbles on riffled land; but intends, in future, to put all ſuch in by the drill.

'Mr Johnſon, of Thurning, puts in his wheat generally by dibbling on a whole furrow; tempering was the practice, but it is left off by the beſt farmers.

'Mr England, of Binham, drills all his wheat on the flag, and prefers it to tempering; and this not only here, on a ſoil comparatively light, but alſo at Hindringham, where it is more ſtiff. He ploughs his ollonds directly after harveſt, to give time for the weather to pulverize the ſurface; but, if there be not time for this, effects it by harrowing and rolling, &c. Directly after the plough, he goes with a heavy two or three horſe roller to preſs the flag firm; and weights Cook's machine, which ſo does well in every caſe he wants it for: Mr England is clearly againſt the practice of tempering light land, which often brings poppies, that would not otherwiſe appear. Tempering is now done only by old-faſhioned farmers, and for the ſake of four-furrowed work.' p. 275, 276.

We lately heard a great deal in favour of drilling corn, and conſulted the ſection devoted to that ſubject with much anxiety. We are, however, left as much in the dark as ever.

'Mr Drozier, of Rudham—To raiſe a great crop of wheat, how would you put it in—would you drill it?—No. I would dibble. Mr Drozier, laſt harveſt, had dibbled and drilled; the dibbled beat. In 1800 he had none drilled; but in 1802, I heard that he drilled again.' p. 349.

The advantages of dibbling muſt be numerous, if credit is given to the following minute.

'Mr Burton, of Langley, remarked, that good as this practice was in ſome reſpects for the poor, there are inconveniences flowing from it. Girls, old enough for ſervice, are kept at home by it. Gleaning is their employment in harveſt, which gives them *idle habits in the fields*, then *dibbling* follows; and the girls lying about under hedges with the men, produces the natural conſequences on their manners; baſtardy flouriſhes, and *maid*-ſervants are uncommonly ſcarce.' p. 361.

Notwithſtanding

Notwithſtanding the ſize of this publication, three chapters appear to be wanting, ſo as it might be in uniſon with the plan chalked out by the Board for conſtructing the county ſurveys. No other obſtacles to improvement are hinted at, except *rooks*, though what is ſtated is rather in favour of theſe animals than otherwiſe. Perhaps Mr Secretary, like us, was a little tired when he arrived at the chapter, *on the means of improvement.* This chapter we have always regarded as the moſt important part of theſe publications, though perhaps, in the eye of Mr Secretary, it was viewed as unworthy of attention. Differently, however, did the Board think, when they were originally conſtituted; for their inſtructions to the ſurveyors directed, 1. That they ſhould take an account of the preſent ſtate of huſbandry; 2. Deſcribe any obſtacles that were in the way of its further improvement; 3. Suggeſt the means of removing theſe obſtacles, and extending internal improvement. Certainly the plan was judiciouſly and wiſely contrived, though, alas! Mr Secretary, who formerly ſaw obſtacles on every hand (*vide* his writings previous to 1793), now views the rural and political economy of Great Britain as altogether perfect, and incapable of receiving any improvement whatever.

Solomon ſays, '*Of making many books there is no end; and much ſtudy is a wearineſs of the fleſh.*' Theſe adages ſeem to be verified by Mr Secretary Young; for, in fact, there is no end of his literary labours; and book has ſo faſt ſucceeded book, that, what with *tours*, *travels*, *annals*, and *ſurveys*, the catalogue of his works now far exceeds that of the celebrated Lackington, when he commenced the bookſeller buſineſs. On the other hand, this gentleman certainly conſiders much ſtudy as a wearineſs of the fleſh; for he ſeems to ſtudy none at all; at leaſt the materials which he rapidly gathers, are preſented without method or arrangement. We have ſometimes been tempted to compare his huſbandry collections (the county ſurveys in particular) to the heaps of corn, chaff, and broken ſtraw, collected at thraſhing machines, before theſe implements were furniſhed with the appendages of rakes and fanners. In the confuſion which occurred, the machine had neceſſarily to be ſtopped before the rubbiſh was cleared away; ſo, in like manner, the Engliſh reader, when peruſing the works of this rural Coloſſus, muſt be impeded in every page, by the multitude of cramp and provincial terms which remain unexplained, whilſt his attention is jaded and exhauſted by a total neglect of *lucidus ordo* in the arrangement of the huge maſs of information aſſiduouſly collected.

N.

BRANCH

BRANCH III.

Agricultural Intelligence.

The ſummer quarter, generally conſidered, has been unfavourable to the growing crops, and preſented weather of a more variable nature than uſually occurs even in this changeable climate. During the months of May and June, and the firſt week of July, cold drought formed a prominent feature, and, even when rain was received, a ſucceſſion of ſtormy winds directly followed, and diſſipated the moiſture before it could be of any benefit. In the ſecond week of July, after a heavy thunder ſtorm, a general rain took place over the whole iſland, accompanied with a conſiderable degree of heat; and, ſince that time to the date of this article, almoſt every day has furniſhed leſs or more moiſture. The ground is therefore completely ſoaked, and damage thereby threatened, of much greater magnitude than was dreaded even from a continuance of the drought which prevailed in the preceding months.

Owing to the above circumſtances, huſbandry operations have rarely proceeded with regularity and preciſion. The firſt two months were good for working the fallows, but unfriendly to the vegetation of turnips. Latterly, it has been impracticable to meddle with the fallow fields, or to ſet out the turnips with advantage; conſequently few of the firſt will this year be ſufficiently cleaned, whilſt the laſt, in many inſtances, ſtand a great chance of being imperfectly thinned and cultivated. Any defect in theſe operations is neceſſarily accompanied with material loſs in the ſucceeding years; for a rotation marred at the outſet can rarely afterwards be ſucceſsfully executed.

A brief deſcription of the different crops falls next to be given. To begin with wheat, the moſt valuable grain, and which is now cultivated much more extenſively, both in the weſtern and northern diſtricts, than formerly.—The plants were greatly thinned, eſpecially on inferior ſoils, by the cold winds of April and May; and though a great amendment afterwards took place, yet in few places can the crop be conſidered as exceeding an average, whilſt in many others it may be regarded as greatly below that ſtandard.

The bloſſoming proceſs, however, having paſſed under favourable auſpices, a full ear appeared, and plump grain promiſed to be the iſſue, had not the late thunder ſhowers lodged the ſtrong fields, and threatened a viſitation of mildew, the moſt dreadful diſtemper to which this grain is liable. It is impracticable as yet, however, to aſcertain whether or not this evil will follow, though, if dry mild weather is not ſoon received, there is every cauſe to apprehend that damage of greater or leſſer extent will be the conſequence.

Barley

Barley we believe to be leſs and leſs cultiyated every year. The fields ſown early with this grain are not luxuriant; but thoſe laſt ſown received much apparent benefit from the July rains. Oats, which are a kind of aquatic, ſuffered ſeverely from the drought, and, in general caſes, received leſs benefit from the rains than might have been expected. The early varieties, in fact, were too far advanced when a ſupply of moiſture was received, though the late ones increaſed conſiderably in bulk, and may be eſtimated at ſomething like an average. Beans and peas, in many inſtances, promiſe to be good crops; but, in numerous others, the plants are ſtunted, ill coloured, and badly podded. In a word, were a general eſtimate to be called for, it might ſafely be ſtated, that, of the different grains, wheat, if mildew is eſcaped, is undoubtedly ſuperior to the others;—that, altogether, the crop in Scotland is rather below than above an average, and that it is inferior to the one reaped laſt year by many per cents.

Drought being always hoſtile to leguminous crops, of courſe, both the paſtures and hay fields have yielded but a ſcanty produce this ſeaſon. The paſtures have ſtood little ſtock, compared with what they did laſt year; and the weight of clover and rye-graſs per acre, has in many inſtances turned out not to be one half of what was then got. After all, what was made into hay threatens to be rotted by the rains; and, whilſt the article may be expected high in price, little of it will be of ordinary quality.

The grain market has not fluctuated much, nor has any ſcarcity appeared. It is very probable, however, that the ſtock in hand, at the end of the ſeaſon, will not be ſo great as was laſt year, though this is a point which neceſſarily is difficult to be aſcertained. With regard to cattle and ſheep, a kind of glut lately appeared in different markets, partly occaſioned by a want of graſs, which forced premature ſales, and partly by that eagerneſs to ſell, which unavoidably occurs when there is the ſlighteſt cauſe to believe that an article is on the falling hand. From our North Country correſpondents we learn, that the demand for lean ſtock has not been great this ſeaſon, and that a large quantity of cattle ſtill remain with the dealers. Wool ſold higher than was expected, though, on the whole, below laſt year's prices.

From the increaſed rate of wages, or from a ſcarcity of working people, many more diſputes occurred in various counties betwixt maſters and ſervants at laſt Whitſunday than known at any former period. A caſe which happened in Eaſt Lothian, and received a formal deciſion, not only in the inferior but alſo in the ſuperior Court, ſhall be detailed; and this is done, not only becauſe we have been requeſted to give ſuch an account by ſome reſpectable friends, but alſo becauſe we view the deciſion as of material importance to the intereſt of agriculturiſts in general, ſeeing that, had it been of a contrary nature, nothing ſhort of anarchy and inſubordination amongſt the working people might have been expected as the unavoidable conſequences.

The facts were ſhortly theſe.—A married ſervant, at the uſual hiring time,

time, namely, betwixt Martinmas and Chriſtmas, took a houſe from, and engaged his ſervice for one year, that is, from Whitſunday 1806 to Whitſunday 1807, to a neighbouring farmer. When this circumſtance came to the knowledge of his *then* maſter, either he or his grieve, no matter which, applied to the ſervant, and prevailed on him to continue in his ſervice, which circumſtance was immediately intimated to the farmer with whom he had recently engaged. The anſwer returned was, in ſubſtance, that the ſervant would not be releaſed from his engagement, but muſt enter home at term time. Nothing further was done till the ſeaſon arrived when gardens are cultivated and potatoes in the field are planted, when the ſervant refuſed to do either with his then maſter; which was a plain proof that he, the ſervant, conſidered himſelf as engaged to another. On this diſcovery, the maſter brought a proceſs of declarator before the Sheriff-Court, in order that it might be timeouſly aſcertained whoſe ſervant the man was at the term of Whitſunday; and called the ſervant and the gentleman who had hired him, as parties in the proceſs. No appearance was made for the ſervant; but the gentleman who had engaged him appeared, and contended by his procurator, that there was no ſuch thing as *locus pœnitentiæ* in a buſineſs of this nature; and that, after a bargain was made, a departure therefrom could not take place on the part of the ſervant, unleſs with the approbation and conſent of the perſon with whom he had engaged. The Sheriff was pleaſed to ſuſtain this defence, and to decern accordingly; but a bill of advocation was preſented to the ſuperior Court, wherein it was alleged, on the following grounds, that the interlocutor ought to be reverſed; 1. Becauſe that *arls* were not given; 2. Becauſe that *locus pœnitentiæ* was a privilege enjoyed in every tranſaction, and that ſuch a privilege had been uſed in due time. The Lord Ordinary ordered anſwers to be given in, and theſe were immediately lodged, wherein, *inter alia*, it was maintained, that *arls* in ſuch a buſineſs were not neceſſary, the practice of the country being directly the reverſe of what was maintained on that point; and that as for *locus pœnitentiæ*, it was a claim not recognized in common law, and not allowed in any caſe, except in tranſactions which, by the cuſtom of the country, were not final or binding on the parties till they were reduced to writing. The bill of advocation was reported by the Ordinary to the whole Court, who were unanimouſly of opinion to refuſe it; and, by this deciſion, aſcertained as fixed points of law,—that *arls* were not neceſſary to eſtabliſh the validity of a verbal bargain,—and that a bargain, once made and concluded, cannot be reſiled from by one of the parties, unleſs the other is pleaſed to conſent to the reſilement.

The reſolutions introduced into the Houſe of Lords by that able and judicious ſtateſman Lord GRENVILLE, may be viewed as of greater importance to the people of Scotland than almoſt any public meaſure ſince the union of the two nations under one government. To conſider theſe reſolutions in the aggregate, or as they will affect the community at large,

large, is foreign to our preſent purpoſe, though we cannot help noticing them ſlightly, ſeeing that the agricultural intereſt will, among others, participate of the numerous advantages which muſt accrue from the propoſed reformation of our legal ſyſtem.

It is almoſt ſuperfluous to point out the immenſe benefit which agriculturiſts would enjoy, were every cauſe wherein they are concerned decided by a Jury. In fact, at this moment, ſomething of the ſame nature is generally reſorted to; for we ſcarcely know of a cauſe which related to practice, where reſort was not made to the opinion of viſitors, whoſe report, in nine caſes out of ten, formed the baſis of the ſubſequent deciſion. Now, as aſſiſtance of this nature is never ſought after till the legal gentlemen have exhauſted their ſtores, till they have ſpoke all that they have wrote, and wrote all that they have ſpoke, as ludicrouſly deſcribed by the late Lord Aſhburton, it is plain, that an appeal to a Jury at once, would be attended with incalculable advantages. As, for inſtance, when a proceſs of miſlabour is commenced, were the Court to order the proſecutor at once to reduce his charge into the ſhape of regular counts or articles, and direct the defender, without argument, to deny or acknowledge the truth of each reſpectively, then iſſue might be joined, and the buſineſs go before a Jury without further delay. Inſtead of this ſimple mode of procedure, what do we recognize at preſent, but a ſyſtem of *replies* and *duplies*, which, in different ſhapes, may be protracted till the queſtion of expenſes becomes a bone of contention, more fiercely fought for than the original ſubject of diſpute? In fact, the exiſting ſyſtem, inſtead of being calculated to promote the public benefit, which certainly ought to be the object of ſuch inſtitutions, is manifeſtly of a contrary caſt. We find no fault with the practitioners of Court for making the moſt of their preſent ſituation, though it is devoutly to be wiſhed that a change may ſoon take place, in conſequence of the reſolutions, opened in Parliament under circumſtances ſingularly auſpicious, being in the next ſeſſion completely maturated and carried into effect.

Some of our friends ſeem to think, that if the reformation propoſed ſhall be beneficial to the public, it muſt, in the like degree, be injurious to the Bar; conſequently, that every nerve of oppoſition may be expected from that quarter. We happen to differ a little from theſe gentlemen, and believe that the Bar will ultimately be benefited as much, if not more than the public, by the propoſed alterations. No man of common ſenſe will, at this time, go into Court on ordinary buſineſs, and ſeek redreſs, unleſs he is moved by pride, paſſion, pique, or folly; therefore, the objects of contention are limited and leſſened; but, were the mode of proceedings ſimplified, and the hazard of heavy expences reduced, there is every reaſon to believe that the number of ſuitors would be doubled, tripled, nay, quadrupled. When two-horſe ploughs were firſt introduced, the cry was, what is to be made of the boys? though, fortunately, the latter never had more employment, or received higher wages, than ſince that æra. The like exclamation was made at the introduction of thraſhing mills, in behalf of the old men, though

it has turned out that the old men have been greatly benefited by the introduction of machines. In like way, the lawyers may be as well off as at preſent, nay, perhaps, much better, in the event of our legal ſyſtem being renovated and reformed.

When on law ſubjects, it may be proper to notice an interpretation lately given to the act 1661, relative to march fences, which, if generally imitated, would lay a new and ſevere burden on the tenantry of Scotland. The merits of the caſe alluded to, ſhall be detailed in a few words.

A fence, originally erected by two conterminous heritors, being in bad condition, an action was raiſed by one of them againſt the other for repairs, which occaſioned a counter-action at the inſtance of the defending heritor againſt the tenant in poſſeſſion, to compel him to repair the ſaid fence. The tenant anſwered, that he could not be brought into the field as a party, not being bound by his leaſe, either to make or ſupport fences; and that as the act 1661 laid the burden of erecting march fences on the reſpective proprietors, the taſk of repairing and ſupporting remained with them, till the tenant, by a new contract, came under that obligation. The Judge-Ordinary ſuſtained this defence, and aſſoilzied the tenant. A reclaiming petition, however, was preſented, wherein the proprietor, *inter alia*, contended, '*that the act 1661 by no means contained the general code of Scotch law reſpecting rural economy*,' (an obſervation diſtinguiſhable for its truth and originality), 'but that it is a partial enactment confined merely to one object, viz. to encourage encloſing and the improvement of the country.'—'Here it ſtops, and very properly ſo; for the ſubſequent repair of that fence is left to the *common law* of the country.'

In anſwers for the tenant, it was maintained, 1. That a march fence is unknown in common law, and only recognized in the ſtatute. 2. That the act 1661 embraced not only the erecting, but alſo the repairing of march fences, otherwiſe the laudable purpoſes of the Legiſlature might be completely diſappointed. 3. That he (the tenant) got no benefit from the fence in queſtion, the other ſides of the field being unencloſed. 4. That the only obligation in his leaſe, concerning fences, was of a negative kind, namely, that he was not to deſtroy them. 5. That the act 20. Geo. II. declares, that no tenant ſhall be compelled to perform ſervices, but ſuch as ſhall be ſpecified in the leaſe, or in a ſeparate writing.

On adviſing the petition and anſwers, the Judge-Ordinary was pleaſed to alter his opinion, and to decern againſt the tenant. Againſt this interlocutor, the tenant, in his turn, reclaimed; but the petition offered, was refuſed without anſwers. Since that time, the repairs called for have been executed, the tenant prudently determining rather to implement the interlocutor, than ſeek redreſs in the Superior Court, where, at all events, his expenſes would exceed the ſum at which the repairs were eſtimated.

Having

Having given a brief view of *this* queſtion, and of the arguments uſed on both ſides, it ſhall now be our buſineſs to conſider the *general* queſtion, namely, Whether the tenantry of Scotland are bound, by common law, to repair and uphold fences, notwithſtanding that the reſpective tenures by which they hold poſſeſſion contain no obligation or preſtation of that nature. To us the queſtion is new, and we believe it will be the ſame to almoſt every one of our readers. The deciſion quoted, muſt, however, be regarded as of much importance, and deſerving of inveſtigation; for, were it to paſs unnoticed, others of the like import might ſpeedily follow, till at laſt a common law was actually formed, ſufficiently ſtrong to reſiſt the moſt vigorous attacks.

In the *firſt* place, according to every principle of juſtice and equity, no perſon can call upon another for the performance of a duty or ſervitude, unleſs it can be inſtructed, either by word or writ, that the latter had come under an obligation to perform the duty or ſervitude that was demanded, or that it was impoſed on him by the law of the land, as an appendage to his ſituation. So far as relates to individuals, this propoſition is unqueſtionably correct; were it otherwiſe, the legal polity of the country would be defective, and no man ſafe from arbitrary and vexatious claims, eſpecially if placed in a ſtate which inferred a partial dependence upon another. In the caſe of tenants in Scotland, the legiſlature has ſubjected them to ſtatute-labour on the public roads, to one half of ſchoolmaſter's ſalary, and one half of aſſeſſments for the poor; and theſe muſt be paid by them at all events, whether expreſſed in their leaſes or not. But a tenant is not ſubjected to any other public burden, (the taxes which he pays in common with his fellow ſubjects excepted), unleſs there is a ſpecial covenant in the leaſe, whereby he binds and obliges himſelf to diſcharge it.

In the *ſecond* place, before leaſes became the eſtabliſhed bond of connexion betwixt landlord and tenant, it is highly probable that many obligations appertaining to each, were aſcertained by a reference to cuſtom and uſage; but the moment that leaſes were regularly extended in writing, the law contained in them, (a law which the parties made for themſelves), ſuperſeded appeals to cuſtom and uſage, and confined the demands or claims of each to the preſtations and obligations narrated in the written articles of agreement. We are aware that ſome of our law authorities go a little farther, and, when treating of farm-buildings, conſider the tenant as bound to keep them up, whether he has or has not covenanted to do ſo. The juſtice or equity of this rule need not, however, be inveſtigated; for every modern leaſe contains a clauſe, though differently worded, whereby the tenant, in one way or other, becomes bound to maintain the houſes, and leave them in a certain ſtate or condition at his departure. Here we may remark, that, in the early ſtages of agriculture, when the tenantry enjoyed ſlender ſecurity of poſſeſſion, houſes were kept up by proprietors, in the ſame manner as done in the caſe of urban tenements at this day. When leaſes became common, the interim burden was firſt thrown on the tenantry, though

though proprietors, in numerous inſtances, continued to furniſh all the great timber, or, more particularly, what was required for roofing the farm houſe and offices. More recently, the taſk of ſupporting houſes, and leaving them either in a habitable or ſufficient ſtate, has been thrown altogether on the tenantry; though there is not a proprietor in Scotland, who will truſt to common law authority for enforcing this duty, which, in every caſe, is ſecured by a ſpecial obligation in the leaſe.

Except with regard to houſes, there is no authority in favour of the doctrine we are reſiſting, namely, that tenants are ſubjected by common law, to the performance of certain duties or ſervitudes, notwithſtanding that ſuch were not ſtipulated in their leaſes. No doubt, we have ſeen and heard of many attempts to fetter and controul the management of tenants; but theſe were always founded upon general covenants, which admitted of different interpretations, and were not bolſtered or ſupported by a common-law foundation. But, at any rate, the act 20th Geo. II. is deciſive, when applied to the queſtion before us, unleſs we go into the opinion of a certain *profound* lawyer, who lately diſcovered, that common law was ſuperior to ſtatute law. Now, with ſubmiſſion to this ſage, we ſhould ſuppoſe, as a general principle, that common law can only be acted upon, where ſtatute law is wanting, or, in other words, that cuſtom and uſage can alone be called in, where no written law is to be found.

In the *third* place, we maintain, that there is no ſuch thing as a common law, applicable to the erecting or ſupporting of fences; and that the uſe and cuſtom of Scotland, ſince fences were firſt known or eſtabliſhed, has uniformly been, to regulate every thing, which belonged either to their erection, ſupport, or condition at the end of the leaſe, by the written articles of the deed which had been entered into by the proprietor and tenant. On this point, we might appeal to every profeſſional man, who has acted in thoſe arbitrations which neceſſarily occur at the termination of leaſes, and inquire, whether the preſtations contained in the leaſe were not, in every caſe, the rules which guided and determined his judgment, when inſpecting fences, and eſtimating the repairs that may be neceſſary. If the leaſe ſhould be ſilent with regard to fences, no proceedings on that ſcore take place. If it ſays the enclоſures are to be left in a *fencible* condition, then ſuch repairs are awarded as may keep and ſecure beſtial within their bounds; while again, if *ſufficient* is the term in which the condition of the fences is expreſſed, repairs of greater magnitude will be given, in the event of any defect appearing.

But to come to particulars. It is evident that no common law with regard to fences could exiſt in Scotland before the Reſtoration; becauſe, before that period, except thoſe of a few enclоſures adjoining to the houſes of great proprietors, no fences had then been erected in this northern part of the iſland. After the act 1661 was paſſed, various march fences were in conſequence erected by proprietors; but more than ſixty years elapſed, before a ſingle tenant in Scotland was bound either

either to encloſe his ground, or to ſupport the fences thereon erected. During this period, it is therefore ſelf-evident, that there could be no ſuch thing as a common law which bore upon fences, ſeeing that almoſt every part of the country, even the diſtricts now moſt ſufficiently encloſed, was then lying in an open-field ſtate. About the year 1720, Mr Cockburn of Ormiſton introduced a general encloſing on his eſtate; and there is unqueſtionable authority for aſſerting, that his tenants were the firſt of the profeſſion taken bound to make encloſures. Since that era, the practice has gradually ſpread over all the cultivated diſtricts of Scotland, though ſtill every part of the ſyſtem, either reſpecting the mode of execution, or the condition of the fences at the concluſion of the leaſe, has been regulated by a previous paction betwixt the parties. After encloſures were firſt introduced, it was not uncommon for landlords to protect and ſupport them, like as is ſtill done by proprietors of graſs parks. About forty or fifty years ago, the burden of upholding devolved upon the tenant, though without any ſtipulation on his ſide to leave them in any particular condition at his departure. Finally, they have, in moſt of our modern leaſes, been turned over altogether upon the tenant, under ſtrict obligations of leaving them either tenantable, fencible, or ſufficient at the end thereof. In none of theſe things do we obſerve the ſmalleſt veſtige or trace of what is called *common law*, though we ſee the parties concerned making innumerable laws for themſelves. The only way in which common law can be applied to fences, is of a negative nature. The tenant has no more right to deſtroy fences, than to burn the proprietor's houſe. Were he to tranſgreſs in the firſt caſe, he might be puniſhed in the like manner as if he committed evil in the other; but as we never heard of any tenant contending for the right alluded to, it is unneceſſary to ſay any thing upon it.

In ſhort, when we *take a broad view* of the general queſtion which at this time has occupied our attention, it muſt appear clear, and beyond all diſpute, that there is no ſuch thing as a common law right ſubjecting tenants to uphold and repair fences, and that the alone rule of judgement, in every caſe which relates to fences, is to be found in the leaſe granted by the proprietor to the tenant, which may be characterized as the tenant's *magna charta* of poſſeſſion. There may be a common law right as to houſes; for houſes were erected before written leaſes were in uſe; but we are not, by analogy, to extend ſuch a law to fences, or other branches of improvement, merely becauſe theſe, like houſes are *fundo annexa*. Conſtructive laws have at all times a dangerous tendency. They may be interpreted or applied in ſuch a way, as to prove grievouſly oppreſſive; and ſeldom, either in a private or public point of view, lead to beneficial conſequences.

The Duke of Athol, on the 30th of June, was elected Preſident of the Highland Society of Scotland, in the room of the Duke of Argyle, deceaſed.

We announce this election with ſingular ſatisfaction, being firmly convinced that there is not a nobleman in Scotland who has the improve-

ment of the country more at heart, or better disposed to promote the happiness of those placed below him, than the Duke of Athol. The friendly regard for his numerous tenantry, long displayed by his Grace, has been recognized by every traveller who has visited his extensive domains; and this friendship being reciprocal, affords full evidence of the rectitude and wisdom of the system uniformly and steadily pursued by this worthy nobleman. On few properties have more efficient and beneficial improvements been executed, than upon the Athol estate; and while the rent-roll has thereby been considerably raised, the tenants, to a man, admit that their condition has been greatly meliorated. This was accomplished by granting leases for twenty-one years; by building suitable farm-steadings; by abolishing run-rig and common land, and every kind of servitude; by making useful and convenient roads; by enclosing open fields; by feuing ground for villages; and by furnishing lime and marl to those who brought waste muirs into a cultivated arable state. In short, the benevolent and public spirit of the Duke of Athol is conspicuous on all occasions; and happy would it be for the people of the British isles, was his conduct imitated by every one who, like him, is placed in an exalted and dignified situation.——*2d August.*

Extracts from Private Correspondence.

SCOTLAND.

Dumbartonshire Quarterly Report.

The weather since the beginning of May was dry, generally blowing, and little or no rain fell from that time till the 11th July; of course, the ground remained long in a parched state, and much injury was done to the growing crops. In other respects, the weather afforded every facility for carrying on the varied operations of husbandry in the best style.

The wheat promises universally to be a good crop, and seems to have suffered less injury from the drought than any thing else. The bear (barley not being common here) also promises well: but, from the state of the market for some years past, little of this grain is now sown. A few years ago, wheat was rarely cultivated in this district; but now it is greatly on the increase; and the produce is such, as to hold out every encouragement to persevere. Experience shews, that, even in this moist climate, no crop is more productive, or more profitable; and without it, the rents daily offered for land never could be supported. The idea, therefore, that this climate is too moist for raising wheat to advantage, seems to have been hastily assumed in theory, and is not sanctioned by experience; so that, were the Ayrshire farmers to adopt the practice as extensively as their situation permits, perhaps this western part of the island would be able to supply its own markets with this valuable grain.

As the cultivation of wheat has increased, that of bear has regularly diminished. Considerable quantities of this grain were formerly raised

raiſed here; and although it is now very much circumſcribed, there is ſtill as much as the market demands. It is at preſent only cultivated by the Moorſide farmers, where ſoil and climate are incapable of raiſing wheat; and by farmers in favourable ſituations, who have old tacks at low rents, and can afford to go on, without putting themſelves to the trouble of leaving the old-faſhioned beaten path. The time, however, is faſt approaching, when wheat will be the moſt important crop in every ſituation where ſoil and climate will bring it to perfection.

The hay turns out a very light crop; but as it has been moſtly ſaved without getting a ſhower, its excellent quality will be ſome little compenſation. The potatoes and turnips look well; but the latter are not extenſively cultivated, as there is always a great demand for potatoes to ſupply this, and the adjoining manufacturing diſtricts. Oats appear to have ſuffered more from the ſevere drought, than any other crop; and, however the corn may turn out at harveſt, there muſt be a great deficiency of fodder, which will be very ſeverely felt; and which even the moſt favourable weather cannot now remedy.——*July* 24.

Extract of a Letter from a Gentleman on a Tour through the North of Scotland, dated Roſsſhire, July 24.

'I put off writing till at the utmoſt extent of my journey, in order that I might give you an account of the whole, and ſhall begin with my leaving Edinburgh, which was on the 10th inſtant. The crops from that to Queen's Ferry, of every kind, looked well; thence to Kinroſs the ground is bad, and none of the crops worth noticing. Even potatoes, on which they depend not a little, were all black, owing to a ſevere froſt in June. To the ſouth of Perth, a Mr Stein is making conſiderable improvements on a property of his own; and there are excellent crops of wheat, beans, and every thing elſe on both ſides of that town: but after I paſſed Luncarty Bleachfield, all the way to Inverneſs, where I arrived on the 13th, I may ſay with ſafety there is nothing that will near pay the expence of ſeed and labour, a very few ſpots excepted. I went to a friend's in the neighbourhood that night, where I was detained next day by heavy rains. In the evening, the weather being ſomewhat ſettled, I went over his farm, on which great improvements are made ſince I was laſt there. I alſo took a peep of the Caledonian Canal, an undertaking which will not ſoon be completed; and as yet they cannot fix the year when it will be finiſhed, though already 120,000l. is expended. I left Inverneſs on the 15th, and, croſſing at Keſſock Ferry to Roſsſhire, went to Mr Mackenzie's of Allangrange, who has improved and encloſed his property to a very great extent, in the moſt ſatisfactory manner. In paſſing to Dingwall, I went through the lands of Ferintoſh, where the effects of diſtilleries might have been expected to appear; but I do aſſure you that the reverſe is the caſe, there being nothing but ſtarvation in that diſtrict. Around Dingwall there is very fine ground, and good crops of wheat and other grain. From that I went up Strath Peffer, which, if pro-

perly cultivated, would be of firſt rate value. There was no wheat ſown earlier than 1803; and now there is about 50 acres, which is the beſt I have ſeen this ſeaſon; and in places where I am told never any thing grew but ſorrel, &c. there is the fineſt barley, and all from the effects of lime. To the eaſt of Dingwall, there is the eſtate of Tulloch, belonging to a Mr Davidſon, which is highly improven, and moſtly in fine paſture. On the road eaſtward, there is a good deal of fine land; but hitherto little or no wheat has been thereon ſown, though the ſmall quantity cultivated is good in general. Except on the land belonging to Mr Mackenzie of Kincraig, the crops and farming are miſerable in this tract. Mr Cockburn Roſs is alſo a great improver. I paſſed on to Eaſt Roſs to an old friend, who has got about 260 acres of by far the beſt land I have ſeen in this quarter. Before he entered to the farm, wheat was not ſown; and this year he has fifty acres that would not diſgrace Eaſt Lothian. He has alſo a moſt abundant crop of hay, but his oats are not good; he has, however, a fine field of barley and excellent turnip, which ought to have been thinned three weeks ago; but the delay is attributed to *the preachings*. I breakfaſted with another friend near Tain, who muſt have made great exertions in improvement, as he has the firſt rate paſtures, upon which he has about ſix ſcore of cattle, not by any means in bad condition. From the ſituation of his turnips, I alleged he had imbibed a little of the ſlovenlineſs of the county; but the *preachings* got the blame as uſual. He has, however, ſome capital wheat. I then croſſed the Dornoch Frith in an old boat to Sutherland, to ſee the Dunrobin cattle; but unfortunately they were ſold two days before I arrived. There is about 600 acres of as fine paſture land there as you ever ſaw. Remember me to all friends in the land of Canaan.'

Banffſhire Quarterly Report.

The weather, through the greateſt part of the ſummer quarter, has been dry, with cold ſcorching winds, frequently from the north, which proved unfavourable to vegetation, but afforded a good opportunity for preparing the turnip fields. Thoſe ſown early look healthy, and promiſe a fair crop; but the late ſowings ſeem to have little chance of doing well. The oat and barley crops were much ſtunted towards the end of June, but greatly relieved by frequent rains and warmth, about the 10th June; and a conſiderable change has ſince that time taken place upon free, deep ſoils. A deficiency, however, is ſtill viſible on all the inferior ſoils, theſe being much thinned by the cold chilling winds in the early part of the ſeaſon, and now putting out a very ſhort ear, particularly the potatoe oats. Wheat promiſes to be a fair crop; and if diſeaſe keeps off, which is not apparent as yet, a conſiderable return may be expected. The peas, in ſome fields, are very rich in bloſſom, and abundant in ſtraw, eſpecially where the land has been recently limed. Drilled beans are partially introduced, and ſucceed very well within a few miles of the coaſt. The wheat ſown after them is this year very promiſing; but theſe articles make but a ſmall proportion of the

the crop here. Hay turns out to be very light, nearly one third below laſt year's. The price does not ſeem, however, to be getting up, nor is there ever much demand for it but when ſtraw is ſcarce; ſo that the farmer muſt uſe it on the premiſes to the beſt account he can. The paſtures were turning bare, in conſequence of the drought; but the late rains have again produced a full bite.

At two or three markets in the beginning of the ſeaſon, there was a conſiderable demand for good cattle, and prices not much amiſs; but, at preſent, ſales are very dull, and every market cheaper than the preceding; of courſe, a ſmall proportion of our cattle have gone ſouthward. Grain has been very fluctuating during the quarter. There is a briſk demand at preſent for oats, and for the ſmall quantity of wheat ſtill on hand. The former ſells from 18s. to 21s. per boll of 128 pints, and the latter at 33s. to 35s. per boll of 88 ditto. A conſiderable quantity of oats may ſtill come to market, if the rains are not of that endurance as to cauſe a late harveſt. The price of labour has been riſing out of all proportion to farm produce for ſome time paſt; but at a market for engaging ſervants laſt Whitſunday, for the half year enſuing, a pitch of dearth was experienced, altogether unknown in this county before. From 8 to 9 guineas were currently given, and, in many inſtances, 10 guineas refuſed. Day-labourers are very ſcarce, and none to be got under 1s. per day for any kind of work, with victuals. Many farmers are ſhort of their ordinary eſtabliſhment, which muſt ultimately have a bad effect. That the farmer cannot long ſupport theſe and various other heavy expences he is now loaded with, has been long predicted, and is a prophecy which will not be long of being fulfilled, unleſs ſome very favourable changes ſhall take place ſoon.——25. *July.*

Aberdeenſhire Quarterly Report.

The few days of fine weather, mentioned in laſt report, were of ſhort duration, being ſucceeded by cold northerly winds, frequently with froſt at night, and ſometimes ſhowers of ſnow, which continued till about the 18th of May. We then had two or three weeks of fine growing weather, which, for the time, brought forward the graſs in great abundance, and made a great difference on the look of the corn-fields; but this again was ſucceeded by a northerly ſtorm, with cold winds, that continued until the end of June. Since July commenced, the weather has been more genial, being conſtantly freſh and warm, with frequent and heavy falls of rain, often accompanied with thunder. The hay crop, except upon very ſtrong ground, or ſheltered ſituations, is light; very little clover amongſt it; and, being cut in unfavourable weather, has been cured with difficulty, and not without loſs. Paſture graſs went much off during the month of June, but has recovered greatly ſince a ſupply of moiſture was received. The ſeaſon was exceedingly good for dreſſing turnip-land, and putting in the ſeed. The ground is therefore full of plants; but they have not come faſt forward, owing to the coldneſs of the weather at firſt, and then to the rains being too heavy for them, when in their feeble ſtate; but although their growth has been ſomewhat retarded, there is every reaſon to expect they will

turn out ſufficiently luxurious and weighty in the end. Potatoes are coming forward very rapidly. All the different ſpecies of grain, whether of bear, of oats, or of peas, have ſtood the ſeaſon well, and, from their preſent appearance, promiſe an abundant return of grain, and a ſufficient proportion of fodder. The market for oats has been very ſteady, at 18s. and 20s. per boll. Bear has had few purchaſers, and the price not much above that of oats, ſay 20s. to 21s. Oat-meal, 17s. 6d. to 18s. 6d. per boll of 8 ſtones. Cattle, which had ſcarcely attained laſt year's prices at any time throughout this ſeaſon, have, for the laſt three or four weeks, come to a ſtand altogether; few merchants having appeared to buy them at any price. Indeed, they did not come forward into condition ſo faſt as uſual; but, from the clemency of the weather for ſome time paſt, the freſh bite of graſs, and the additional time, that defect will be fully remedied. Yet, as few have been removed, and the ſeaſon ſo far advanced, it is to be feared that this will turn out a bad year to the graziers in this county. Sheep have continued much about the price they brought laſt year.

The price of labour increaſed 20s. and 30s. at laſt term. Men-ſervants are now from 7l. 10s. to 10l. Sterling in the half year, over their maintenance. Jobbers and day-labourers 2s. to 3s. per day. Turnpike roads are ſtill advancing in all directions, and land continues to ſet as high as ever.——*July* 26.

Letter from the Diſtrict of Carrick, Ayrſhire.—July 25*th.*

'THE ſeaſon, during this quarter, though rather dry, has been, upon the whole, favourable for the purpoſes of Agriculture. At one period, indeed, during the month of June, the crops looked extremely backward; but, towards the end of that month, fine ſhowers came on, which in a very ſhort time produced a remarkable change; and we have at preſent the proſpect of as abundant a crop of all kinds of produce as for ſeveral years bypaſt. If any exception is to be ſtated to this, it is in the ſown graſs and natural paſtures. Rye-graſs is not a full crop; and the paſtures, from the general drought, cannot be ſaid to have ever got fairly up. Wheat, oats and bear, which are our prevailing crops, are generally looking well; and the turnip, the culture of which is continuing to ſpread, is alſo promiſing: So that if the ſeaſon continues favourable, it is to be hoped the huſbandman will abundantly reap the reward of his induſtry.

'The demand for ſtock has continued through the quarter, though, it is believed, not at advanced prices. Of late, a depreſſion in the price of live-ſtock is talked of, on account of the ſcarcity of paſture. There has been no great variation in the price of grain, except a ſmall riſe in that of wheat. Oat Meal is about 21s. & 22s. per boll; Wheat, 35s. & 36s.; Bear, 31s. & 32s.; 8 Wincheſter buſhels. The price of labour, and the demand for farms, keep pace with each other. How the farmer is able to ſupport the complicated increaſing demands that are made upon him, is a myſtery that cannot well be fathomed. It would tempt one to think that he has ſome ſecret (different from ſkill

and

and induſtry) which the world does not know. It is devoutly to be wiſhed that the bubble may never burſt. But it ought to be remembered, by both proprietors and tenants, that there is a *ne plus ultra* in this, as well as in the *ambition of kings*. Stretch the ſtring too far, and it muſt unavoidably break.'

Wigtonſhire Quarterly Report.

THE apprehenſions entertained at the date of laſt Report, have, happily, been only realized in part. Fine ſhowers have occaſionally fallen; but the intervals of dry and windy weather have been long and ſevere. On ſome heavy lands, this has been beneficial rather than otherwiſe; but the light ſoils, which form a great part of our ſurface, were, in many ſituations, unable to reſiſt the prevailing drought of the ſeaſon: Of courſe, crops of corn and hay are unequal, being abundant in one place, and materially injured in another. Paſtures have ſuffered moſt; and, on very light and gravelly ſoils, are literally deſtroyed.

Till lately, however, cattle are underſtood to have maintained their prices, and the trade has been exceedingly briſk; but this, the continuance of dry weather has unavoidably checked. Meanwhile, harveſt promiſes to be early; but, upon the whole, the bulk of the coming crop will, in all probability, prove defective.

Early upon the morning of Friday the 11th current, a tremendous thunder ſtorm burſt over the heads of the terrified inhabitants of this diſtrict, accompanied by hail of an unuſual ſize, and a torrent of rain, which fell in a direction extending from ſouth ſouth-weſt to north north-eaſt. This partial deluge did conſiderable injury in ſeveral places, particularly by carrying off the ſoil from hanging land under drilled green crops, whilſt the hail committed ſerious ravages on the other crops. This ſtorm appears, from various accounts now publiſhed, to have been vaſtly extenſive, and in many places to have produced calamitous effects.

Wages ſeem to be ſomewhat ſtationary; and the rent of land will in a few days be aſcertained by the criterion of the famous roup of Baldoon eſtate, &c. advertiſed to take place in our county town upon the 31ſt, and which, for ſome time paſt, has excited an anxious and univerſal curioſity.—*July* 26.

Letter from Falkirk, July 26th.

'IN this diſtrict, we have experienced a very ſevere and long drought. Except a very trifling quantity about the middle of May, we have had no rain ſince laſt Report, till the ſecond week of July, but by no means enough, under exiſting circumſtances, to prove radically beneficial to the crops of grain, and too late for the hay. From this cauſe, the crops in the Carſe do not preſent the uſual luxuriant appearance of that fertile diſtrict.

'Wheat is our beſt crop, but not equal to laſt year. It has, however, the advantage of not having yet been lodged, which has been uniformly the caſe with us for three years paſt before this time. This, with the increaſed quantity ſown, will probably give us a full average crop of

that grain. Much, no doubt, depends on after weather; but it is already very far advanced to maturity. In ſpeaking of the probable produce of this crop, it may be proper to remark, that a diſeaſe has appeared in it, which I ſuſpect is pretty general; at leaſt, in ſeveral fields that I have purpoſely examined, I have found it more or leſs preſent; and this both on thin and thick chaffed varieties; but more conſiderable on the latter. The diſeaſes of wheat are ſo indiſtinctly characterized in the language of farmers, that I am not quite certain what name to give it, but ſuppoſe it is what is denominated gum or red oaker. It ſeems to affect the ear only, the ſtraw being healthy, and appears as a yellow, or rather orange-coloured matter, covering both the outſide and inſide coats of the chaff; and, where it has made more progreſs, it affects alſo the grain. How far the crop may be ultimately injured by this occurrence I know not; but it does not appear yet to have done much harm. There has been no uncommon ſtate of the weather, at this ſeaſon, to which it can be aſcribed, except perhaps ſome mornings of pretty ſharp hoar froſt two or three weeks ago.

'Both oats and barley are thin on the ground, ſhort in the ſtraw, and certainly below an average. Beans are alſo ſhort in ſtraw, but pretty well podded. The appearance of the potatoe crop is much mended ſince the rains. Paſtures have been very bare through the ſeaſon, but are a good deal improved of late. Hay is a lighter crop than for ſeveral years paſt, but has been got up in high order; nor does the ſecond cutting promiſe much, as there is a great deficiency of red clover; the price has ſtarted at 9d. per ſtone, although little has yet been done in the way of ſales. I think it will ſoon go higher.

'The ſeaſon has been ſingularly propitious for the perfect working of ſummer-fallows, which are in the very beſt order. Much attention is now paid to this proceſs; and if your uſeful Work had rendered no other ſervice to the intereſts of agriculture, than merely ſtemming the torrent of newfangled doctrines that at one time had nearly threatened its total abolition, this alone would have been ſufficient to ſtamp its ſterling worth. The corn crops are far advanced, and harveſt promiſes to be early; with tolerable weather, I ſhould think, in four weeks.

'Both our grain and butcher markets have been ſteady for ſome time paſt. They may be noted at preſent as follows: Wheat 42s. per boll, Linlithgow ſtandard meaſure. Barley 25s.; Beans 22s.; both per Stirlingſhire boll. Oat Meal 1s. 6d. per peck of 8 lib. Dutch. Beef in retail 8d.; Mutton 9d.; Lamb 7d.; all per lib. tron of twenty-two ounces Engliſh. The butcher market has been well ſupplied with excellent meat of every kind.'

Fife Quarterly Report.

THE long continued dry weather, without even one refreſhing ſhower till beginning of July, has not only made the hay crop very light generally, but, in a great meaſure, will cauſe the oats and barley to have little ſtraw. Upon all light and gravelly ſoils, thoſe crops were nearly

nearly deſtroyed. The plentiful rains, ſince, have ſaved them; and, where the ground is clean and in good order, tolerable crops of both may yet be expected. Where the ground is poor and foul, they will not recover; indeed, ſuch fields will be hardly worth the expence of cutting.

Wheat is univerſally a good crop; far above an average one. The extreme dry weather alone prevented it from being too luxuriant, and lodging. Peas and beans, eſpecially peas, are in general good; ſo are patatoes, the rains being juſt in time for them. Flax promiſes to be a more equal and finer crop than we have ſeen for ſome years, if dry weather continue; but if much rain fall now, it will injure, by lodging the crop, and compelling the owners to pull before it is ripe. Upon the whole, if fair weather continue after the abundant rains lately fallen, there is ſtill reaſon to expect an average crop, but much leſs ſtraw than laſt year.

The prices of oats roſe from 18s. to 24s., when the new crop was looked upon as nearly loſt by the drought. Now that the rains have fallen abundantly, prices rather look down, at leaſt it is not apprehended they will riſe further.—Turnips are a very unequal crop; many have not come up at all; and ſome fields are ploughed down. The early ſown ones are good. The grazing trade turns out a bad one this year. Stacks were purchaſed on high terms, and rents were advanced; whilſt the iſſue is, that as the paſtures were almoſt deſtroyed by drought, cattle did not improve, nor is there much demand in the market for them.—*July* 28.

Inverneſſhire Quarterly Report.

This diſtrict, of late, has been deluged with rain, particularly on Monday, 21ſt current, when greater torrents deſcended than remembered by the oldeſt man living. Every little ſtream was thereby immediately ſwelled to the ſize of a large river; bridges and mills were ſwept away; unpaſſable gaps made in many roads; and immenſe damage done to the growing crops. In particular, the wheat fields are lodged in ſuch a way, as they will never move till the ſickle finds its way below them; of courſe, grain of very inferior quality may be expected; and already the red oaker or gum has ſeized upon every field. Before theſe rains, turnips were doing well, but now they are completely at a ſtand, being ſickly in aſpect, and ſtunted in growth, eſpecially thoſe firſt ſown. The barley and oats promiſed well, both in the hilly and low country diſtricts, though their future progreſs cannot be ſpeculated upon. A late harveſt is an evil much to be dreaded in all northern diſtricts; and ſhould the rains continue much longer, this evil can hardly be avoided. Hay was a good crop could it have been cured ſufficiently; but, under exiſting circumſtances, much of it is rotted, and none will retain a large portion of ſtrength and ſucculence.

At Fort-William market, the demand for wedders and wool was briſk, and a ſmall advance took place on laſt year's prices. On ewes and lambs there was no advance. The drovers are purchaſing black

cattle

cattle at much about the prices of laſt year; and, as for grain, prices have remained ſteady. The quantity on hand will fully ſerve the diſtrict till the current crop is reaped.

The Caledonian Canal continues to go on as rapidly as the ſtate of the funds will admit of. The ſecond lock at Clachnacary is nearly finiſhed.—*July* 26.

Berwickſhire Quarterly Report.

We had a great deficiency of moiſture till near the end of this quarter, with a prevalence of north and eaſt winds, which kept the air at a low temperature for the ſeaſon. Excepting the rain which fell on the 4th of June, we had not a ſhower worth mentioning for eight weeks previous to the 11th of July, when we were viſited by a thunder ſtorm, attended with heavy rains, which have been frequent ſince.

The drought, while it favoured the working of turnip fallows, occaſioned a partial braird in the late ſown turnips, and kept the early fields long in a dwarf ſtate, during which they were much annoyed by the fly. Since the rains, however, the blanks in the late fields have filled up, and the early fields have made ſome progreſs, and got a ſecond hoeing; but the crop in general advances very ſlowly: indeed, the ſuperabundant moiſture we have now got, will be againſt it for ſome time on retentive ſoils.

Winter wheats had a promiſing aſpect before the rains; but are now very much lodged. Spring wheat is rather weakly and thin. Oats, upon good land of any depth, promiſe well; but, upon thin ſoils and dry gravels, they have been greatly ſtunted by the drought, and will prove conſiderably deficient in ſtraw. Peas and Barley (neither of which occupy much extent of ground) have a healthy appearance. Beans are alſo a healthy crop, but were late in ſhewing the bloom.

Paſtures ſuffered much from the drought, but are now recovering their verdure. Hay-making has proved a tedious buſineſs; the crop is but light; and has, in ſeveral inſtances, been damaged by the rain. Potatoes, in the low diſtrict, were hurt by a hoar froſt on the night of the 20th of June; in other reſpects they are healthy, but not luxuriant.

Sheep for the Engliſh paſtures were much in demand at the beginning of this quarter, and ſold above the rates of laſt year. A good many young cattle were alſo taken ſouth at that time; but this demand ſlackened as ſoon as the drought began to prevail; and moſt of the cattle ſold ſince that period, have gone to the Lothians.

At St Boſwell's fair on the 18th current, there was the greateſt ſhow of ſheep and lambs ever remembered; but the demand not being great, lambs were from 2s. to 3s. a head lower than laſt year, and a great number left unſold; ſheep experienced a ſimilar depreſſion. There was alſo a full market of lean cattle, which met with dull ſale at reduced prices. The demand for fat, however, was pretty briſk, and good prices obtained.

Fine ſhort wool has been ſelling from 2s. to 3s. per ſtone higher than laſt year, while the price of long wool has declined nearly in the ſame proportion.—*July* 28.

Dumfries-

Dumfries-shire Quarterly Report.

The barley seed season was favourable both with respect to weather and the state of the land. The progress of this crop has been regular, and it now promises to return more than an average. Oats were generally injured by frosts; the braird was thin, particularly in the upper parts of Nithsdale and Annandale, and long appeared a very poor crop indeed; but the showery weather which came on in the second and third weeks of this month, has improved these crops more than they were supposed capable of. Still they are to be considered much inferior to an average crop, especially on gravel and light soils, where they were early shot. In the lower and middle parts of the country, oats are regular and good. Wheat on well prepared land appears better than usual, especially on the holms; and, barring mildew, which sometimes comes on in the end of July, and in August, a great crop of this grain may be expected. Potatoes appear a full crop, and early. Hay of sown grass is generally light, excepting on loamy soils in good condition. There it is heavy, and all is well got. Bog meadows are light, but at present are growing fast.

Cattle sold at good prices, and without much variation, till the beginning of this month. The drought in the north of England then lessened the demand and the prices. The showery weather since then, which has been fully more general in Yorkshire than here, has quickened the demand again. Sheep have sold nearly at the prices of last season; only that Cheviot or White-faced sheep for breeding have been in more request, and brought high prices for that purpose. Lambs are nearly the same as last year; Cheviot from 10s. to 12s.; Black-faced from 8s. to 9s. Wool of the Cheviot kind has had an advance of about 10 per cent., being sold from 30s. to 33s.; that of Short or Black-faced sheep from 8s. to 10s. the stone.——*July* 29.

Perthshire Quarterly Report.

Every kind of crop suffered much from the cold dry weather in June, and beginning of July, excepting wheat, which, on the rich soils, has, by that means, in a great measure, been preserved from lodging. The late rains have, however, laid part of that grain, and considerable injury is apprehended therefrom. Smut is uncommonly prevalent this season, with wheat on middling soils, and likewise with red and potatoe oats. Perhaps it is not generally known, that pickling or steeping the seed in stale urine and quicklime prevents or palliates this evil, in a crop of oats, as well as in one of wheat. Oats, barley, and beans, though the two former are lately much improved, will fall considerably short of an average: having tillered little, they are exceedingly thin, and, when harvested, will be very deficient in bulk. On shallow gravels, every kind of crop has failed; and although much aftergrowth is now rising among oats and barley on these soils, it cannot come to maturity, and will serve only to retard and endanger the harvesting of the crop. In many situations, whole

whole fields of potatoes were much hurt by a frosty night in the end of June: they have, however, regained their wonted verdure, and forbode an ample produce, unless their late growth shall render them defective. Flax is an article of considerable importance in some districts of Perthshire, but failed this year, almost universally; a grievance not a little heightened, by the consideration, that the price of the seed was higher than it has been for the last twenty years. Clover and ryegrass hay is not half a medium crop, if we except the carse land from the calculation; and even on that soil, it is not bulky. In general, the pastures were very close eaten before the rain fell; and, being in most cases overstocked, have not improved much since. It was not till the 10th curt. that a considerable tract around Perth got any rain; till which time, a great part of the turnip crop did not braird; consequently, it will be late; but the rain was eight days earlier in some of the remote corners. Fruit forms a considerable item in the produce of the Carse of Gowry; and, this season, is very abundant.

The surveyor is soon expected to begin making out the line of the Lochearn Canal; but he has not yet arrived from Fraserburgh, where he is at present engaged in planning a new harbour. As the canal will be of much importance to a considerable portion of Perthshire, both in an agricultural and commercial view, I shall send you an account of it for the November Magazine, in the event of such an account not appearing in any other publication before that time.

Little grain now remains in the farmer's hands. The price of Wheat may be quoted at 41s. and 42s.; Barley, 24s. per boll; Oatmeal, 1s. 4d. per peck.—*29th July.*

Mid-Lothian Quarterly Report.

Until the 11th curt. when rain commenced, the present quarter was distinguished by a severe spiring drought, accompanied sometimes with cold frosty winds, which not only blighted and blackened the foliage of trees, but affected the spring corns very materially to their prejudice. About the end of June, and beginning of July, oats and barley were not only short and thin, but in many cases wore a sickly, pale aspect, indicating a scanty produce; but they have of late improved considerably. Beans were affected in a similar manner; and, notwithstanding of the late rains, whatever they may have improved in length as to straw, yet, in many instances, will be short in the pod.

Wheat has looked best all along; and, should the after weather prove favourable, there is a fair prospect of its turning out an abundant crop. Turnips either sprung partially, or lay dormant for want of moisture; but, within the last fortnight, have come up evenly, and, should the season turn out fine, may be a tolerable crop; but, like other things, are undoubtedly behind. Potatoes are a partial crop; those first planted suffered much from the wetness of the spring, where the land was not uncommonly dry; in many cases the seed plant was destroyed by wetness, and portions of the ground left bare; elsewhere they have been stunted, first by wetness, and afterwards by drought, and some

ſome fields have been wiſely ploughed up, as unworthy occupiers of the ground.

Hay is a very ſcanty crop; and thoſe farmers who have not tares to fill up the gap, will find themſelves difficulted to make the firſt and ſecond crops of graſs meet. The price expected from the tick is 1s. per ſtone of 22 lib.; and, no doubt, would be more, were it not that there is a good deal of old hay on hand.

The price of wheat has been pretty ſteady, more ſo here than at Marklane. There, the market of late ſeems to have been regulated upon ſimilar principles with the ſtock exchange: good or bad news of the weather, whether right or wrong, ſeems for a time to have had more influence upon the ſales of the day than the ſupply at market. In ſhort, to a perſon at four hundred miles diſtance, it would appear that the dealers in grain had ſometimes miſtaken the ſmoke of the city for the rays of the ſun, and its influences for fine mild weather. Oats have ſtarted of late; but there are very few to thraſh; they are giving from 22s. to 26s. per boll; and Oatmeal 18d. per peck of 8 lib. Amſterdam.

The price of Beef has been pretty ſtationary, at about 9s. the ſtone, ſinking offal, and is likely to continue; the paſtures are very bare. Lambs have ſold well, and the demand for them to the North country, as well as hogs (year-old ſheep), has been greater than for the two laſt years.—*30th July.*

Morayſhire Quarterly Report.

The wheat crop of this diſtrict may be reported as a fair and equal one, being neither injured by ſmut nor mildew; that of peas and beans is alſo uncommonly promiſing; barley is of middling growth, though oats, on the whole, are below an average, and will afford but a ſcanty ſupply of ſtraw. Laſt year's grain is moſtly ſhipped off to the ſouthward; and perhaps there does not remain a thouſand bolls of all kinds in this county, beyond what is required for the internal conſumption, till the new crop is harveſted.

The graſs fields made a poor return this ſeaſon; but, as a large ſtock of old hay remained on hand, no ſcarcity of provender is apprehended. Potatoes are good, and turnips have eſcaped their mortal enemy the fly. Owing to the drought, there has been ſmall demand from the South for cattle, which has occaſioned an uncommon dull ſale for ſeveral weeks paſt.

The credit of this ſmall diſtrict was never more put to the teſt than of late, though fortunately not a ſingle failure has taken place. The Bank of Scotland have ſuppreſſed their agency at Elgin, from which 30,000l. or 40,000l. was generally afloat; and propoſe to do the ſame with the Huntly branch, which is ſituated in one of the greateſt cattle diſtricts. Paper money being a neceſſary medium, and profitable to the venders, when judiciouſly managed, would it not be advantageous for every diſtrict to have its own bank? Aſſuredly, a few active men, of adequate capitals, would carry on the trade more judiciouſly, than any agent receiving his powers from an eſtabliſhment at a diſtance, whoſe directors muſt, in a great meaſure, be guided by views to which he is a

ſtranger.

ſtranger. The managers of a country bank, from local knowledge, would be enabled to diſcriminate betwixt thoſe who are entitled to credit, and thoſe who may be regarded as mere ſpeculators. They would ſupport the induſtrious man, by ſupplying him with their commodities, whilſt applications from people of a contrary deſcription would not be liſtened to. In a word, the advantages of ſuch eſtabliſhments would be an excellent ſubject for diſcuſſion in the Magazine.—*30th July.*

Letter from Glaſgow, 30th July.

'THE wheats in the neighbourhood look remarkably well, and are more early than uſual. From the great quantity ſown, if the harveſt be favourable, we have certainly room to expect a larger produce of this grain than ever was known in one ſeaſon.

'Oats, in general, ſeem but a light crop; it is only upon very rich ground that they are bulky. Beans and peas have a good appearance. Barley ſeems irregular; upon ſome fields it appears good, upon others very middling; the quantity ſown was but ſmall. The hay crop has turned out light; but the late fine ſhowers have conſiderably improved the paſture graſs.

'The importation of grain into Clyde, during the ſummer months, has not been great. No foreign wheat has arrived; a few cargoes, however, are ſhortly expected from America; and three or four thouſand barrels of flour have already arrived from thence. If the harveſt ſhould turn out good, the neceſſity for ſupplies of wheat from abroad will be in a great meaſure ſuperſeded, as almoſt a ſufficient quantity will be grown with ourſelves to anſwer the conſumpt. A few cargoes of oats have arrived from Ireland; theſe, with the produce of our own lands of laſt year, which certainly yielded extremely well, have kept our markets tolerably full of this grain; and, to the more effectually ſupplying them in future, we are of opinion the *Iriſh Intercourſe Bill* will materially contribute; it will beſides have the effect, from the ſupplies being more regular than formerly, to do away, in ſome meaſure, that degree of fluctuation which has ſo long ſubſiſted in the prices of grain, and thereby render the trade more ſteady. Upon the whole, we look upon this meaſure as being mutually advantageous to both countries.

'State of Glaſgow Markets, July 30th.

Wheat.		
Dantzic	40s. to 42s.	per boll Stirlingſhire meaſure.
Scotch	40s.—44s.	
American	43s.—44s.	ditto. of 240 lib.
Iriſh	30s.—32s.	
Iriſh Mealing Oats	24s.—24s. 6d.	ditto of 264 lib.
Ditto Inferior ditto	21s.—22s.	
Scotch Potatoe ditto	24s.—27s. 6d.	ditto Renfrewſhire meaſure.
Ditto Small ditto	21s.—22s.	
Ditto Barley	27s.—28s.	ditto Stirlingſhire ditto.
Ditto Beans	22s.—24s.	ditto ditto ditto.
Ditto Grey Peas	21s.—22s.	ditto ditto ditto.
Oat-Meal	22s.—24s.	ditto of 140 lib.

Eaſt.

East-Lothian Quarterly Report.

At no period were the crops on the dry ſoils of this county more critically ſituated than when rain was received on the 11th of July, except perhaps during the ſummer of 1800, when a return was made, thirty or forty *per cent.* inferior to a general average. At the above period, many of the wheat fields preſented a retrograde countenance; the barleys were thin and languid in their aſpect; the oats ſo ſhort in the ſtraw as hardly to be gathered by the ſickle; and the beans feeble in the ſtalk, and imperfectly podded. The paſtures were literally burnt up, and the clover ſtubbles held out a picture that ſeemed to ſhew the roots were deprived of their vegetative powers. However, the rains, which fell copiouſly for many days, being accompanied with great heat, ſoon brightened up the proſpect, and accompliſhed a conſiderable amendment. The wheats were prevented from purſuing their retrograde courſe, and allowed to bloſſom and fill under favourable auſpices; the barleys recovered greatly, eſpecially thoſe that were late ſown, and the oats ſhot out in length, and promiſed a double quantity of fodder more than originally expected. Paſtures revived; the ſecond crop of clover was animated and reſtored to life; and turnips, which, till then, were in a ſleeping or dormant ſtate, burſt forth into action with increaſed powers. Notwithſtanding theſe favourable circumſtances, the crop on the dry ſoils will be below an average, many fields being too far advanced to get benefit from the rain, though undoubtedly it will be much ſuperior to what might have been expected under different circumſtances.

On clays and loams leſs benefit was received from the rains than on ſoils of a lighter deſcription. On them the wheats were thriving, and though rarely of ſo much bulk as in the two former years, yet, on the whole, their appearance was ſuch as to promiſe an abundant produce. The continued moiſture, however, was too much for them; and at laſt all thoſe fields of any ſtrength were fairly lodged, which, perhaps, is the greateſt evil that can befal a wheat crop. Whether mildew may be the conſequence, depends much on the ſubſequent weather, though, as yet, this dreadful malady has not appeared. Some gum on the ear may be diſcovered, which to a certain extent, is hoſtile to the welfare of the grain; but the general uſe of thin chaffed wheats prevents the progreſs of mildew, unleſs under the moſt aggravated circumſtances.

The benefit from the full ſupply of moiſture to the ſpring crops on heavy lands, depended much on the ſtage at which they had arrived. The earlieſt fields, thoſe which in fact had paſſed the meridian of growth, received leſs advantage than the later ſown fields, which were not arrived at majority. Generally ſpeaking, beans were much benefited; ſo were turnips, potatoes, clover, and paſture graſſes. In a word, the ſeveral crops on heavy ſoils may be reported as equal to an average, though much of their productiveneſs depends on the after weather.

If the rains have benefited the growing crops, they have done infinite miſchief to the fallow fields, which now, at this advanced period

of

of the ſeaſon, can rarely be dreſſed in a huſbandman-like ſtyle. Coming at a time when the fields were generally broke down, the ſoil is abſolutely become little better than a puddle, and hardly to be bettered by any after work which may be given through the reſt of the year. The whole manure remains to be carted out; and this of itſelf is a buſineſs of the moſt ſerious nature in a wet ſeaſon.

Markets have remained tolerably ſteady, and the demand for grain has generally equalled the quantity preſented. The butcher market has alſo experienced little variation, beef and mutton having generally been retailed at 7d. and 7½d per pound weight, Amſterdam. No want of ſupply has been experienced; though it is to be doubted that the bareneſs of paſtures, and the ſmallneſs of the ſtock in hand may occaſion a ſhortcoming afterwards.

A conſiderable number of farms have lately been ſubſet in this county with eminent advantage to the diſpoſers; and it is to be hoped that a practice, which cannot poſſibly hurt the proprietors of land, will be countenanced and encouraged in every inſtance where the tenant in poſſeſſion wiſhes to make ſuch a tranſaction. That the public good is thereby promoted, may be regarded as indiſputable; for no poſſeſſor will ſubſet, unleſs he is ſatisfied that circumſtances render ſuch a meaſure neceſſary; and if the farm is transferred to another perſon who, from ability, increaſed ſtock, or ſuperior knowledge, can render it more productive, then, to be ſure, the public intereſt is benefited in a degree equal with the increaſed rent, or, more properly ſpeaking, with the increaſed produce which the new tenant can raiſe on the premiſes. In ſhort, the proſperity of agriculture depends ſo much on a legal ſanction being given to the practice of ſubſetting, that it would be highly deſireable were leaſes rendered a marketable article, which might be bought and ſold like freeholds. Such a liberty would hurt none, whilſt it would eminently promote the intereſts of agriculture, by cauſing larger capitals to be inveſted therein than can be deemed prudent or expedient, ſo long as a prohibition againſt ſubſetting is rigorouſly maintained by the great body of landed proprietors. The ſeed, however, is now ſown; and it is to be hoped that the produce will be ſuch as may carry conviction to the great body of proprietors, and enable them in due time to ſee their own intereſt. They may be convinced that ſubſetting muſt ultimately prove advantageous to themſelves, becauſe every manner of encouragement beſtowed on agriculture, or thoſe who practiſe it, neceſſarily occaſions a correſponding advantage to the proprietors of land. The tenant, in ſuch a caſe, may be firſt in hand; but he only holds a temporary benefit, which ultimately muſt run into the pocket of the landlord.—*2d Auguſt.*

ENGLAND.

Lincolnſhire Quarterly Report.

Wheat in this diſtrict promiſes to be a good crop, providing that blight and mildew do not ſeize upon it. On the fens, oats, from the ſeverity

ſeverity of drought, are apparently one half ſhort of laſt year's bulk. Indeed, the ſame remark is applicable to beans, peas, and barley, all theſe crops being ſhort in the ſtraw, the ſeaſon of growth being too far advanced when a ſupply of moiſture was received.

The hay crop, from all the varieties of graſſes, is not half the weight of laſt year; and the feeding paſtures have been ſo ſcarce of graſs, as to prevent our oxen and other cattle from fattening ſo well as uſual. The late rains, however, are bringing graſs land of every deſcription into a thriving ſtate; and it is to be hoped that a full beſtyful will ſoon be procured.

Our drainage buſineſs goes on ſucceſsfully, though rather ſlower than could be wiſhed. The ſcarcity of workmen is great; indeed, a ſufficient number cannot be obtained on any account; and though the improvement to be gained from this great undertaking muſt ultimately be of great advantage to thoſe concerned, yet, in the mean time, the agricultural intereſt of the diſtrict ſuffers materially from the riſe on labour thereby occaſioned.——22*d July.*

Letter from Lynn, July 24th.

'We conceive that wheat in this diſtrict will be a full average crop, though not abundant. Peas, however, will hardly be half of our uſual average; Barley about one fourth ſhort. Oats in the high lands are good; but defective in the fens, as well as beans. The markets continue well ſupplied with all kinds of grain, except peas, 58s. and 60s. p. quarter being given for white boilers, and 40s. and 42s. for the grey. Wheat runs from 66s. to 70s.; and fine wheat 72s. to 76s. Barley 34s. to 36s. Oats from 24s. to 25s.; and beſt runs from 27s. to 30s. Beans 40s. to 42s. p. quarter. The crop of rape-ſeed (or coleſeed by ſome) is very large; but what has hitherto appeared is not dry; price talked of 30l. p. laſt. Muſtard ſeed very promiſing. Price from 10s. to 12s. p. buſhel.

Norfolk Quarterly Report.

Few ſeaſons have agitated the minds of the farmers in this country with a more varied ſucceſſion of alternate hopes and fears, than the preſent. The early part of the ſeed time was highly gratifying;—plenty of moiſture, and ſufficient warmth, occaſioned a rapid and regular vegetation. But a conſiderable quantity of turnips remaining to be conſumed late in the ſpring, ſowing was continued to an unuſually late period; when heavy rains falling, which were ſucceeded by ſevere drought, the land, where the turnips had been fed off, turned up in ſuch large maſſes, that no future labour of rolls and harrows could ſufficiently pulveriſe it; and, in ſtrong ſoils, no inconſiderable part of the ſeed remained perfectly dry, under the clods, till the late rains fell. On light ſoils, the ſevere drought ſo completely put a ſtop to the progreſs of vegetation, that, till revived by the ſeaſonable ſupply of moiſture, it appeared an alarming matter of doubt and apprehenſion, whether a conſiderable part of the oats and barley would ever obtain the ear, and get ſufficient length to anſwer the application of the ſcythe. Theſe doubts and ap-

prehenſions, however, are now removed; the barley and oats, though ſtill thin, have got a fair length of ſtem; and we may, I think, average them at full two thirds of a crop. Peas, being forwarder in their growth, have ſuffered more than any other crop; they are in many inſtances ſo ſhort, that neither ſcythe nor hook can touch them, and therefore muſt be pulled up by hand; and the produce, in this caſe, will no doubt prove ſo materially deficient, as probably not to exceed two quarters per acre. Wheat has ſtood, uninjured, both the drought and 'the pelting of the pitileſs ſtorm;' and, as neither blight nor mildew has yet touched it, may be expected to equal at leaſt an average. The harveſt with theſe two crops will begin ſufficiently early; with the former, in the courſe of a fortnight, and with the latter in about three weeks. The barley harveſt muſt be late. Hay, both from natural and artificial graſſes, is a very meagre produce; but it has been got up in good condition. Tares, alſo, have proved very ſhort, and produced much leſs than the uſual quantity of green food per acre. This feed at Michaelmas will probably be found ſcarce and dear. The turnips have vegetated expeditiouſly and fully; but the late heavy rains have almoſt drowned them; conſequently have retarded their growth, and expoſed them, for a long period, to their moſt bitter enemy, the fly. The Norfolk wool fair was held at Thetford, on the 19th inſtant. It is the eſtabliſhed cuſtom for the growers and the purchaſers each to appoint a committee to fix a price. The former demanded for the Norfolk and South Down, per todd, 3l. 6s. The latter offered 2l. 18s. The difference being ſo conſiderable, no ſales were effected; and it remains to be ſeen which party will yield. Probably they will meet each other half way.

The meeting at Mr Coke's was numerouſly attended. Many amateurs, from diſtant parts of the country, nobility, and profeſſional gentlemen, were aſſembled. Several implements were exhibited, but none thought by the judges of ſufficient merit, though ſome of them of ingenious contrivance, to deſerve a premium. Mr Coke diſpoſed of his Leiceſter flock in lots, by auction; and they were in general knocked down at a very high price. He does not think them adapted to this county; and prefers the South Down, of which his flocks now entirely conſiſt. It is his intention to croſs a few of his ewes with Merino tups, two of which he purchaſed from his Majeſty. This croſs will probably increaſe the quantity, and moſt aſſuredly improve greatly the quality of the wool; and if the carcaſe of the South Down can be preſerved from too great deterioration, of which ſome doubt is entertained, the Merino, in this reſpect, being extremely objectionable, it will certainly in the firſt inſtance, benefit the breeder materially, and eventually the country at large, as it will render us leſs dependent upon Spain for a ſupply of fine wool, an article ſo eſſentially neceſſary to our manufacturers. Mr Coke obſerved, that a Norfolk flock had hitherto been conſidered as little more in point of profit, than a dung-cart. But he was convinced that it might, by proper ſkill and attention, be rendered

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a very productive part of a farm; which is unquestionably true. On the last day, after disposing of the prizes to the fortunate competitors, Mr Coke addressed the company at some length; and, amongst other topics, dwelt with considerable animation on the advantages to be derived in this county from irrigation; and mentioned, with suitable encomiums, an instance of very meritorious exertion of spirit and enterprize in one of his tenants, who had watered a meadow, containing about thirty-five acres, at an expence of more than 900l., and refused to be reimbursed, on condition of giving up his old lease, and taking a new one, at an advance of rent, in proportion to the improved value of the land; so fully is he convinced that the increased produce will amply repay this heavy expenditure during the existing term of his present agreement.——*24th July.*

Yorkshire Quarterly Report.

The crops of wheat, in general, are uncommonly heavy in the straw, and promised amply in grain, till the commencement of the rains; which have for some weeks past been so frequent, as greatly to impede that necessary process of nature, the complete impregnation of every grain by the *farina fecundans*, shed during the time of flowering. Hence, the actual produce of this grain may be justly apprehended to be unequal to the prolific appearance it presented, at an earlier period of its growth. On some lands, symptoms of blight and mildew are already found; yet it is hoped, that the speedy occurrence of a few fine sunny days will materially conduce to prevent the extension of that evil, so much dreaded by the growers.

Some of the fallow wheats are much injured by the unusual growth of weeds; and the inferiority of the bean-stubble wheats to those upon clover leas, was scarcely ever before so strongly marked. In the open fields, even contiguous, lands of the latter description have two or three times over the produce of the former, on all varieties of soils; so that, on the whole, little more than a fair average of the produce of the wheat crop, this year, can reasonably be expected, though the earlier prospect was so flattering. Barley and Oats are thinner than usual. Beans and Peas will probably be of more than average produce, having been much improved by the late rains. Rape and flax are full of seed; particularly the latter. Potatoes are good and abundant. The apple orchards are thinly strewed with fruit.

The clovers have yielded heavy crops; but the natural meadows for hay are thin. The present is and has been the worst season for haying them that has occurred for many years. Much has been nearly spoiled; and more is still standing in the fields. The turnip grounds are very full of plants, though the fly or slug has injured some: the hoeing of them is in an advanced state. Summer-fallows are rather backward.

The price of grain is advancing; and if the wet weather continue much longer, it may be very high: yet it is not presumed that many uncommon speculations have been made in the article. Best Wheat,

12s. 6d.; Barley, 5s.; Oats, 4s. 6d.; and Beans, 7s. per buſhel of Wincheſter. Fat Cattle and Sheep are at moderate and rather declining prices. Lean Cattle alſo declining, while Pigs are dear. Beef and Veal, 7d. to 8d. Mutton and Lamb, 7d. per lib. avoirdupois. Good Horſes are dear.

Notwithſtanding the diſcouragement to trade, from the continuance of the war, Wool has been ſold at prices little lower than thoſe of laſt year; yet ſome decline has been experieneed in the finer clothing ſorts. ——*July* 28.

Letter from the Eaſt-Riding of Yorkſhire, July 28.

'SINCE my laſt, the weather was generally dry till towards the end of June, when rain began to fall in moderate quantities, and has continued to the preſent time. Some of the thunder ſhowers have lodged the wheat where the crop is full; but that is not ſo generally the caſe as laſt year, the crop being lighter in this diſtrict. Beans, oats, and barley have improved much ſince rain fell; but the crop of each will not be ſo bulky as that of laſt year. Hay is a light crop, and a great deal of it ſpoiled in the harveſting. Flax is ſhort, thin, and rough topped; but is expected to turn out well barked where workable, the growth having gone on ſlowly and gradual. Rape-ſeed is good. Turnips, ſown ſince the 20th June, have planted well. Thoſe ſown earlier have generally failed, and part have been ploughed down and reſown. Though potatoes have of late improved, yet the crop is expected to be but a poor one, (particularly where the kidney variety is planted), owing to the curl, which is more general than ever remembered before.

Our corn markets have advanced lately. Wheat is now ſelling at 80s. to 81s. per quarter; Beans, 42s. to 44s.; Oats, 24s. 27s. to 32s.

The cattle markets have given way lately, owing to the ſhortneſs of paſturage. Pigs have alſo ſhrunk in price, owing to their being more plentiful than in the ſpring months. Fat has alſo declined. Beef is 7s. 6d. per ſtone, *ſink*, and is expected lower ſhortly; Mutton and Lamb, 6d. per lib.; Veal, 8d. to 10d. per lib.

Eſſex Quarterly Report.

AFTER a dry ſeaſon, which cauſed a thin appearance of barleys and latter ſown oats, relief has at laſt been obtained by a full ſupply of moiſture. The wheats, however, ſtood their ground well, according to their plants; for, at the date of laſt report, they had not in general a promiſing aſpect; ſome indeed have ſince been ploughed up. Beans will not be much more than half of laſt year's crop, being exceedingly ſhort. The bulk of ſtraw, altogether, will be nothing equal to that of laſt year, though, it is to be hoped, the deficiency of grain will not be great. Hops promiſe remarkably well; and in the good old grounds, the bines preſent a moſt pleaſing view. The coleſeed harveſt is nearly finiſhed; the rain, lately fallen, has much retarded the proceſs, and conſiderably injured the ſamples: The price is much reduced, not being more than 29l. a laſt, when laſt year it reached as high as 42l. Wheats within theſe few days have had ſome

appearance

appearance of mildew, the farmers in this county not being sufficiently attentive in following an Honourable Baronet's scheme, of mustering the old women to search in the spring months for the defective plants. Lean cattle are dull of sale; and the hay harvest has not proved favourable.——*28th July.*

Letter from Wales, July 28.

'THE first two months of the summer quarter were dry and warm; and where the land was good, the hay was a fair crop, but, under different circumstances, is scarce worth the cutting, the late rains having come too late for being of any benefit. The most of people are now in the middle of hay harvest, whilst the corn is coming on very fast. Some peas are cut; and, by the end of the week, if the weather continues fine, the wheat harvest will be general near the sea side; and in a few days more, it is likely we shall go about it in earnest. The oats and early sown barley are coming on rapidly; and I hope, if the weather permits, to have a short and early harvest. The wheat, though not of great bulk, seems well filled, and the straw clear. Oats are deficient in bulk, but seem full of corn. Barleys early sown have but a poor appearance, being short and thin. The late sown fields have recovered much since the rains set in, and will be of a great deal more bulk, but long after the other in ripening. Peas and beans are well podded and healthy, though not bulky. Turnips, which increase in quantity in this country yearly, are looking healthy, and most people have them hoed. Potatoes are looking well; and there is a great crop of apples, though most of the other fruits have missed. When on the fruit subject, allow me to say, that though you north country farmers are more enterprizing than your southern neighbours, and exceed them in most things, yet in the article of orchards you are confessedly far behind. I am also satisfied, that if you was only to try fruit trees, you would find more advantage from them than is at present conceived. You may plead want of climate, but that will not do; for, were you as particular in collecting the earliest kinds of apples and other fruits, as you are of wheat, oats, &c. there is no doubt but that the like success would follow. I planted a small orchard ten years ago, and it now produces great plenty; and we have puddings and pyes in the family through the greatest part of the year. The only disadvantage arises from the boys sometimes getting over the hedge, which makes the mistress scold; but, in such a plentiful year as this, they are not missed. Our markets, both for corn and cattle, keep steady since I wrote you last, with this exception, that there has been no great demand for lean stock. The want of grass in England is the sole cause; for both cattle and sheep, that are forward in flesh, sell well. Wool, at the beginning of the season, had a dull sale; but has lately brought something like last year's prices.'

Letter from a Gentleman in Kent, 29th July.

'I RETURNED on Sunday evening last from a tour through this district, where I found the wheats in general much lodged from the late rains. Lent corn, in general, is very deficient, as might well be expect-

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ed from the long drought we have experienced. Hay crops, early laid in, were good and well got up; but late ones are now ſuffering from the rains. Wheat harveſt will commence on forward ſoils next week. Peas have ſuffered exceedingly from the dolphin. Beans are very ſhort, and very badly podded. Hops are in many parts very ſhort of bine. Apples have ſuffered much from the long drought, and fell off faſt when the rains came; cherries and all early blowing fruits ſuffered exceedingly from the blighting winds that took place in the ſpring. Gooſeberries and currants are tolerably plentiful.

Wool has a dull ſale, and lower in price. Hops are extremely dull. Beef, 8d. to 9d.; Mutton, 7½d. and 8d. per lib. Rents are much on the riſe; 22 acres of land (arable and hops) let here by public auction, on a leaſe for 14 years, laſt week, fetched 165l. *per annum*; tythe and all rates to be paid by the occupiers.'

Northumberland Quarterly Report.

THE mild favourable weather, noticed, in the laſt report, to have commenced the beginning of April, continued, with ſome little interruptions of cold and wet, through May and June. On the 2d and 14th May, ſome fine rains fell; from thence to the 8th July, the weather was moſtly dry, with ſome partial wet, particularly on the 10th and 21ſt June. On the night of the 27th there was a white hoar froſt, ſo ſevere, that it killed the ferns and potatoe tops, and, in ſome low ſituations, is ſaid to have injured turnips in the ſeminal leaf. The remainder of July has been almoſt a continuance of wet, with repeated thunder ſtorms, ſome of which ſeem to have been general, on the ſame day, over moſt parts of the kingdom.

The autumn ſown wheats, eſpecially on many of the beſt ſoils along the ſea-coaſt, were materially injured by the froſts in March, almoſt every plant being thrown out *on the tops of the ridges*. Thoſe that ſeem to have ſuffered moſt are the broad high ridges, where the ſoil is a deep, ſtrong, mellow loam. Some ſituations of this kind may be noticed, where the crop is not more than one third of what it ought to have been. The ſpring ſown wheats have in general eſcaped this effect of the March froſts, and have a promiſing appearance at preſent, though there may be ſome doubts of their having been injured in their blooming, by the late heavy rains. On the whole, from preſent appearances, there is reaſon to fear that the wheat crop of this county will be below an average. Accounts from the county of Durham, and North Riding of Yorkſhire, are ſomewhat ſimilar.

In the month of May, oats and barley had the appearance of abundant crops on every ſpecies of ſoil. This appearance, however, has been very much changed upon dry lands; but though the ſtraw will be ſhort, the rains came in ſufficient time to perfect the grain; and it is hoped thoſe crops, on the whole, will turn out much better than was lately expected.

The rains on the 10th and 21ſt June came very opportunely for the turnips, and gave great hopes of a plentiful crop; but the fly, ſo rarely ſeen in this diſtrict, and ſo deſtructive in the counties to the ſouthward,

ward, which did us ſome miſchief laſt year, has this ſeaſon paid us another viſit, and deſtroyed nearly the whole of the firſt ſown turnips and ruta baga. The fields were reſown about the beginning of July; and the rain coming ſoon after, the ſeeds vegetated immediately, and a full crop is expected, though it is probable the turnips will not be ſo large as the firſt ſown ones. It has been repeatedly aſſerted, that the fly attacks only the ſeminal leaf; but, in the above inſtances, they not only injured the rough leaf of the common turnip, but entirely deſtroyed thoſe of ruta baga.

The hay crop is not only light, but has been very ill got, from the repeated rains for the laſt three weeks.

The wool market has been higher for ſhort wool, and lower for long wool, than laſt year. Long wool, which ſold laſt year for 1s. 2d. per lib., ſold this year for 1s. 1d.; and ſhort wool has been ſold for 1s. 6d. per lib., about 1½d. higher than laſt year.——*29th July.*

Letter from London, July 30th.

'ALTHOUGH the late rains have certainly been of partial uſe to the barleys, yet they were too far gone on all the dry warm lands to be generally benefited thereby; of courſe, the crop of that grain muſt fall ſhort of an average, whilſt a great part will produce an unequal ſample. With regard to peas, they are a failing crop; and probably it is only owing to there being a greater ſupply of this article at market than uſual, that the prices have not advanced higher than they are. Our weekly ſupplies of wheat from the coaſt, ſay from Eſſex, Kent, and Suffolk, are large; and from this circumſtance it may fairly be inferred, that the crop of that grain in theſe counties is a good one. Several cargoes of oats having dropt in from the Dutch coaſt under Kniphauſen colours, ſales of that article are rather dull; though, moſt of theſe cargoes being out of condition, their arrival had not great effect on the rate of prices.

'Since the 11th inſtant, very heavy rains have fallen, and lodged the wheat fields completely. Near town, the wheats look well on the ground, and a partial harveſt has already commenced.

'State of London Markets, July 28.

Wheat, Eſſex and Kent,	70s. 78s. 83s.	
—— Fine White,	87s. 90s.	Extra, 93s.
—— Scotch - -	72s. 76s.	Fine dry white, 80s. 82s.
—— Foreign Red	42s. 50s. 62s.	
—— White Dantzic	60s. 70s.	Fine, 80s.
Rye - - - -	40s. 43s.	
Barley - - - -	30s. 33s. 35s.	Fine, 37s. Extra, 38s.
Malt - - - -	62s. 72s.	Fine Norfolk, 75s.
White Peas - - -	42s. 46s.	Boilers, 65s. 70s.
Grey ditto - - -	40s. 45s.	
Pigeon Beans - -	48s. 50s.	Tick ditto, 38s. 41s.
Oats, Long Feed -	22s. 25s. 27s.	Short Smalls, 29s. 31s.
Ditto Polands - -	25s. 29s.	Fine, 32s. to 34s. 6d.
Potato ditto - -	35s.	
Fine Flour - - -	75s. *p.* ſack.	North Country, 66s.
Hay - - 75s. to 84s. *p.* load.		Straw, 36s. to 42s. *p.* do.

Postscript to Scotish Intelligence.

The ſet of Baldoon eſtate, and other farms belonging to the Earl of Galloway, took place in the court-houſe at Wigton, on the 31ſt ult. We intended to have given a detailed account of this buſineſs, the moſt memorable of the kind that has occurred in Scotland; but our limits will not allow. Suffice it therefore to ſay, that an immenſe crowd of people attended, and very high rents were given. In fact, the Baldoon eſtate itſelf brought about 350l. *per annum* more than it was valued at by two experienced ſurveyors. This mode of letting land ſeems preferable to the trifling and indeciſive one of receiving *private propoſals*, in which way people have often been led to bid above themſelves; and, at all events, are kept in anxious ſuſpenſe for a conſiderable time.

NOTICES TO CORRESPONDENTS.

The paper *on the Figure in which Trees ſhould be diſpoſed in Plantations*, is delayed till November, when, accompanied with a ſuitable Plate, it ſhall be preſented to our Readers.

Should the gentleman at Glaſgow, who tranſmitted ſome ingenious obſervations concerning *Free Martins*, favour us with his addreſs, it will be very obliging.

S. L. A.'s *Reply to the Strictures of A. S. on Sheep Smearing*, is neceſſarily poſtponed. A hearing was intended in this Number, but our limits would not permit it. The like notice applies to the valuable Eſſay from Aberdeenſhire, *on the Setting of Land*.

Though the blackberry ſeaſon will ſoon be over, our Readers cannot be profited, till next year, *by the Obſervations of our Forfarſhire friend, on the Uſes to which this ſpecies of Grape may be applied*. Perhaps we may endeavour, in the mean time, to derive ſome benefit from the different Recipes ſo obligingly tranſmitted.

Various Reports, and Articles of Intelligence, were too late in reaching us.

No. XXVIII. will be Publiſhed on Monday, November 10. 1806.

Erratum in this Number.

Page 360, twelfth line from top, for *left*, read *left*.

D. WILLISON, PRINTER, CRAIG'S CLOSE, EDINBURGH.